P 6 AE

App. E. IX-4

1926-7

File No. 6-26

Previous References (C. D.)

Serial Nos. 7-9

Later References

General and Revenue Secretariat.

Serial Three

Part B for April 27

SUBJECT

Report reviewing the progress made in the Creation of co-operative societies in the several Districts during the quarter ending 31.12.26.

D 8369-70 & 30.3.27

to R.W. Connell

Registrar of Co-operative Societies

Records Re

Krishnaiya

Serial No.

GOVT. DIRECTOR * No. 324 dated 5-10-39 INDUSTRIAL CONCERNS.

1577 DEVELOPMENT BRANCH.

Submitted.

1) With the growth and increase of industrial concerns in the State, there are, at present, a very large number of machines of workshop equipment (e.g., lathes, drills) in the several concerns and departments including the Railway and Electrical Departments, Bhadravati, the Central Industrial Workshop, the Govt. Electric Factory etc. Each department or factory has tended to add to its equipment and to buy new machines for its own needs, with a view to self sufficiency, without, being clear information in most cases as to whether similar machines were in surplus or available from any other Works or Factories; and it is likely that this has resulted in some avoidable expenditure on such machines and in overlapping.

2) With a view to avoid such expenditure or overlapping, especially now that machinery is costly and difficult to secure, and to make the best use possible of the existing equipment, it seems very desirable that a careful inventory is made of all the machines - except specialised machinery designed and installed for special production processes — in each Department or State-owned or-aided Factory in the State. The inventory would contain, classified under main heads, details regarding the name and purpose of each machine, its original cost and age, where it was got from, its condition, capacity, and how it is actually being used at present, and other useful

NOTE-Contn. Sheet.

File No. 1577 of 19 .

General and Revenue Secretariat

Serial No.

useful information about it.

3) Besides providing information of value as to the nature and extent of such equipment available, and the use that is being made of it, the information would be of value with a view to see if each of certain types of work, e.g., castings, heavy machine work, building of small machines or parts, repair work, etc., could not advantageously be developed in each place best fitted for that work, instead of every place attempting to do everything itself.

4) If the idea is approved, it is suggested that Mr. Appadurai Mudaliar or some other suitable officer may be requested to compile an accurate inventory of the kind referred to. All the Departments or Factories could be instructed to send him the information required by him in this regard, and the Officer could then visit each of the concerns and factories, and draw up the inventory. It should be possible to complete the work in about 2 months.

M.S. Srinivasan
Govt. Director,
Industrial Concerns.
4th Octr.1939.

OCT 7 [illegible]
3420

First Member of Council
through Development Secy. with compliments).

5) [illegible]
6/10

6) Please show this to the Dev Sec. for further suggestions, if any. I expected that the committee would

General and Revenue Secretariat | File No. | of 193 . | [App. F. III—2

Serial No.

was appointed some time ago to look into the working of the several Govt workshops would have gathered this information and examined it. But apparently the Committee proceeded on their lines.

MM
9/10/38

SECY TO GOVT DEPT.
27 OCT 1939
GOVT OF MYSORE

W.O.No. 81-39 9/10/39

Draft
min Compts) 7/

9/10/39
M
9/10

M.C. 24/39-40/27.10.39

Returned with compliments.

OFFICE OF THE
DIRECTOR. I. & C.
NO. 24 / DATE. 16.10.39

9) I am not clear as to which Committee the Member refers in his above minute. If the Committee meant is that which was appointed to consider the question of the future of the Central Industrial Workshop, an examination of the equipment of the Machine Shops of the various Government Industrial Concerns was not one of the terms of reference to that Committee.

9) So far as the Central Industrial Workshop is concerned I may at once say that there is no surplus machinery.

10) I agree that before buying new equipment or discarding any existing machinery, it is necessary to examine the equipment available in the several Government Workshops so that unnecessary outlay on new machinery or possible loss in the disposal of old ones may be avoided.

11) So far as I am aware each Workshop is equipped with machinery suited to the special work undertaken by it.

Put up with the G.O. about the Committee to enquire as mentioned in the file 17-10-39

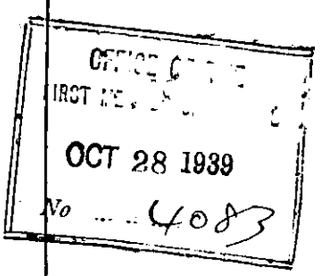
NOTE—Contn. Sheet.

WD 02220—GPB—1,000—23-2-37

(PTO)

GGC File No. 1577 of 1939. | General and Revenue Secretariat

Serial No.



I am not sure that there is duplication of machines to any great extent.

(2) There is, however, no objection to having inventories made of the equipment available in the several Workshops. This can be easily attended to by the Officers in charge of the concerns and I do not think that it is necessary to depute the Industrial Engineer or any other Officer for this purpose.

(3) I believe the Mysore Iron and Steel Works have their own property list which is being brought up to date every year.

(4) In regard to the Central Industrial Workshop I can furnish the required information immediately.

(5) Inventories so prepared may be exchanged between the various workshops so that they may be made use of whenever required.

Bangalore,
26th Oct. 1939.

Director of
Industries and Commerce.

DEVELOPMENT SECRETARY
TO GOVERNMENT.

27/10/39

I member)

(6) Please put up the papers relating to the appl. of the Committee

29/10/39

30/10

D5123/3 n 4

Inventory of machinery in the Govt Workshops

2006
1517

General and Revenue Secretariat — File No. — of 1939. — [App. F. III-2

Serial No.	
	1) The file 42-38 regarding the constitution of the Committee to examine the question of converting the C.D. Workshops into a service dept has been forwarded to the Govt of India Dept. Concerns for an officials for further remarks. This will be send to him in continuation for appn and return of the file.
W.to.no 19/9	
	2) Forwarded with compliments, to the Govt Director, Industrial Concerns.
W.O.no 93-39	By Order,
8.1-11-39	
	1-11-35 for Secy to Govt of Dept.
P	3) Kind appn is invited to letter No D 3941/2 dt 42-38-2 & 4-11-38 (issued file) constituting a Committee with Dir. Dte as Chairman to examine and report on the question of amalgamation of the C.D. Workshops partly with the Govt Elec. factory and partly with the Elec. Dept.
	4) Since then, Mr. B.G.A. Muralidhar has been entrusted with the work of taking an inventory of the machinery in the Govt workshops. This report is awaited.
	4/11/40

NOTE—Contn. Sheet.

Inventory of machinery in the Govt workshops

In File No. 297 of 1939. | General and Revenue Secretariat.

Serial No. 3

From the Dir. I.C.

No B. 24/35-40 dt. 13-12-39.

Fd a report of the Indl. Engineer on the machinery available in the several Govt. Workshops & also the suggestions for coordination of work therein.

2/ The inventory made by the B.S.P. Kundalia goes to show that all the Govt. Workshops have been equipped with just the machinery required for ... allocation to the need of the Concerned Depts. except that there are some overlappings in the equipment of the C.D. Workshop and the Govt Elec. factory. He accordingly suggests that a redistribution of the machinery in the two Concerns & also a Nut-making equipment for the Elec. factory. (Vide Statement B appended to the Report).

2/ The most important feature of the Report is that the machine-shop, Forging, Foundry and Carpentry Sections of the Govt Elec. factory could be combined with the similar sections of the C.D. Workshop and that the Inspection Section of the Central Indl. Workshop with that of the Govt. Elec. factory.

3/ Remarks of the Govt Dir. Indl. Concerns will be obtained & a copy forwarded.

15/12

15/12

15/12/39

SECY. DE ... 15. DEC. 1939 ... GOVT ...

Inventory of machinery in Govt Workshops 2364

General and Revenue Secretariat. File No. 297 of 1939 [App. F. III-2

Serial No.

Forpmnl. with send to Dir-gc for remarks

16/12/39

I member)

26/XII
18/12/39

18/12

OFFICE OF THE FIRST MEMBER OF COUNCIL
DEC 18 1939
No 5723

Confdl No. 124/39-460
19.12.39

27) forwarded, with Compliments, for Govt. Director, Industrial Concerns, for favour of remarks.

By Order
for Secy to Govt
of Dev dept.

Returned with compliments.

The investigation carried out by Mr. Appadurai Mudaliar has been useful in that it not only furnishes an up-to-date inventory of the machinery and equipment in the concerns under reference, but also brings to light the need for greater co-ordination and consultation between the several shops than obtains at present, and for a rational plan of handling and developing specialised lines of work in the Workshops or Factories best fitted for it,

GOVT. DIRECTOR 1618 18-4-40 INDUSTRIAL CONCERNS

SECY Govt 18 APR 1940 Contn. Sheet CCITC. MADRAS

it, instead of each of them trying to do everything.

29) 2. I think it would be quite useful if the detailed further discussions which Mr. Appadurai Mudaliar proposed in para 3 of his note, to have with each concern re: means of improvement, rationalisation, readjustment etc., are pursued when the results of the investigation made by him are still fresh in his mind.

30) 3. As far as the Government Electric Factory is concerned, it will concentrate its attention in expanding the operations connected with the manufacture of Transformers, Switch gear, Electric fans etc., and such of those remunerative electrical accessories ~~which~~ As could be manufactured. It will also develop the production of galvanised hardware articles which are in constant demand in the Electrical Engineering field.

31) 4. The report also makes some helpful suggestions re: the transfer of certain machines between Bhadravati, the Central Industrial Workshop ~~or the Mysore Iron & Steel Works~~ and the Government Electric Factory.

32) 5. I agree to the transfer of the machines suggested by Mr. Appadurai Mudaliar from the Govt. Electric Factory to the Central Industrial Workshop or the Mysore Iron & Steel Works.

33) 6. Mr. Mudaliar has suggested that the Forging Section should be transferred to the Central Industrial Workshop. I am rather in favour of the Forging Section being continued

Redistribution of work in the C.D.W. & the Govt. Elec. Factory

2364

Serial No.

continued at the Electric Factory for the manufacture of electrical and other hardware which are much in demand, and are being produced and sold in increasing quantities. It may be necessary that a Nut Forging and Tapping equipment should be added to the existing Forging equipment to meet the heavy demand, as suggested in the report.

34) 7. I agree that the Foundry Section may be transferred to the Central Industrial Workshop.

35) 8. With regard to Surplus Stores, a list of articles that have not moved fast for the last two years is being prepared and will be circulated among the different Industrial Concerns as suggested by Mr. Appadurai Mudaliar.

M.D. Srinivasan
Govt. Director,
Industrial Concerns.
15-4-1940.

Development Secy. with compliments).

ks)

36) The redistribution of section in the C.D. Workshop and the Govt. Elec. Factory suggested by the Dir. Ind. and agreed by the Govt. Dir. may perhaps be accepted in consultation with the Dir. Ind.

37) Submitted for orders. Refer. para 20 & 26

ks 9/4

38) Dir. Ind.

Mr. Mill.

39) Govt. Dir. Ind. Concerns

Rec. 2215 2. APR

Rec. 22/4

Hon. Ch. Sec.

40) Sec. 22/4

NOTE—Contd. Sheet.

WD 0284—GPB—30,000—13-8-37

Redistribution of work in the Civil & Mil. Govt. Electric Factory

2:01
23-C

File No. 3215 of 193

General and Revenue Secretariat

(10) The proposal to co-ordinate the activities of the several concerns referred to and reshuffle the machinery and equipment so as to enable the most advantageous results being obtained is no doubt a welcome one.

(11) At the present stage, I am unable to have a clear idea of the financial implications.

(12) Shifting and concentrating of machinery would involve changes in the Capital Account and working Capital Account of the concerns affected. I presume that the net result will involve no addition to expenditure but on the other hand lead to better results.

(13) The I.A.D. officer may be associated with the presiding officers of the respective concerns and this part of the work also got completed.

SECY 28 MAY 1940 MYSORE

MAY 28 1940 No 11189

AD 27.5.40

28/5/40

30/5/40

30/5/40

Draft L.O. submitted for appl.

Please put up a typed draft

Typed draft submitted.

8/7/40

For favour of approval

8/7/40

TYPING 8 JULY 1940

General and Revenue Secretariat | Sc File No. 29) of 1939 | [App. F. III–2

Serial No.	
	Ref:- Financial Secy's Opinion paras 40 to 43
	Draft for Govr Letter
	For perusal
	Cpl 16/7
	Secy
	AR 19.7.40
	Govr Cpl 17/7 Issued
4	To The Dir Sc
	The Govr Dir Ind Comms.
	The Comptr. Hqrs I.F.D.
	The Chairman, M.L.S.W.
	D 239-42 d 13-7-40.
	Issue orders to the Divisions for the transfer between the C.I. Workshop and G.E.F.

The original report of the Engineering Party has not been received. When can it be expected? Please ascertain the reason for delay in submission of report & obtain it.

[Vide Dir

NOTE–Contn. Sheet.

Mr.M.Venkatanaranappa, B.A.
~~Xxx.RAMANATHAN~~,
CHAIRMAN,
Mysore Iron & Steel Works, etc.

~~PUBLIC OFFICES~~,
~~BANGALORE~~

No. 56

Bhadravati,
20th July 1940.

My dear Mr. Noronha,

I have received a copy of the Government Order No. D 239-42/I & C 297-39-4 dated the 13th July 1940.

It is difficult to follow the various directions in the Government Order without referring to the reports read in the preamble, viz, the report of the Industrial Engineer, the Un-official note of the Government Director, Industrial Concerns and the subsequent note by the Industrial Engineer and Superintendent, Central Industrial Workshop. I shall be glad if you will kindly arrange to send me copies of these or in the alternative send the file, which I shall return after taking notes wherever necessary.

Yours sincerely,

C. E. Noronha, Esq, M.A.,
Secretary to Government,
Development Department,
Public Offices,
BANGALORE.

The Report of the Indl. Engr and the Un-official note have been sent to the Govt Press for printing. A few printed copies will, on receipt, be sent to the Chairman together with a copy of the Govt Order, if necessary.

Serial No.

Please call for the original report of the Industrial Engineer re: allocation of work between the Govt Workshops Simla,

Sec F
30/1

To The Supdt Govt Printing
D 3647 d 6-2-41.

Requests him to return the original report of the Industrial Engineer re: allocation of work among the several Govt Workshops.

Office memo Simla,

Sec A
10/2

Issued D 5803 d 6-5-41

TYPING SECTION
5 MAY 1941
GEN. & REV. SECTT.

NOTE—Contn. Sheet.

2006

Tels.—"INDUSCOM.

Codes used—A.B.C., 5th Edn., Bentleys.

GOVERNMENT OF MYSORE.

Department of Industries and Commerce.

GEN. & REVENUE SECRETARIAT.
17 NOV
DEVELOPMENT BRANCH.

Mr.M.S.Ramchendra Rao, B.A.,
Director.

OFFICE OF THE DIRECTOR.

D. O. No. B-24-39
U.O.

Bangalore, dated....15th..November...1939.

Dear Mr. Krishna Rao,

I am sending enclosed for your information a copy of official memorandum of even No. dated the 9th November 1939 placing Mr. B.G.A. Mudaliar, Industrial Engineer, on special duty in connection with the examination of the details of the equipment of each of the Government Workshops etc.,

Yours sincerely,
M Ramchendra

P.H.Krishna Rao, Esq.,M.A.,
Secretary to Government
Development Department,
Bangalore.

GOVERNMENT OF HIS HIGHNESS THE MAHARAJA OF MYSORE

General and Revenue Secretariat

No. D 2553-54/Ile 297-39-2 Bangalore, Dated, 20th November 1939

Official Memorandum.

There are now several workshops under the control of Government like the Central Industrial Workshop, the Railway Workshop and the Workshops in the Electric Factory, Bangalore and the Mysore Iron and Steel Works, Bhadravati. They are variously equipped with machinery designed to undertake different kinds of wor Government have reason to believe that there is an overlapping of both equipment and work in several of these workshops. In the interest of the economical working of these workshops and in order to avoid a waste of effort, Government consider it desirable that an inventory should be made of the machinery in each workshop and a report submitted to Government as to the equipment that is suited for each workshop, the equipment that may be transferred to other workshops and the k classes of work that may be allocated to each workshop.

The Director of Industries and Commerce is requested to depute the Industrial Engineer Mr. B.G.A. Mudaliar to make this inventory in addition to his normal duties and send up a report before the end of November 1939. He may issue necessary subsidiary instructions to the Industrial Engineer in the matter.

By order,

Secretary to Government,
Development Department.

To The Dir. of I & C

Als.3

Dc 9/c 297-39-3
2364

Tele { Phone No. 2004
Grams—INDUSCOM.

In reply please quote number, date & short title.

SECY DC 14 DEC. 1939 GC
GEN & REFERENCE BRANCH 14 DEC. 19..
DEVELOPMENT BRANCH.

GOVERNMENT OF MYSORE
DEPARTMENT OF INDUSTRIES AND COMMERCE

FROM M.S.Ramchendra Rao,Esq.,B.A.,
Director of Industries and Commerce in Mysore,
Bangalore.

To

P.H.Krishna Rao,Esq.,M.A.,
Secretary to the Government of Mysore,
Development Department,
Bangalore.

No. B.24/39-40/U.O. Dated 13th Dec.1939.

Enclosures One report with enclosures.

SIR,

Subject: - Deputation of the Industrial Engineer Mr.B.G.Appadhorai Mudaliar,to make an inventory of the several workshops in the State.

With reference to O.M. No. D.2553-54/I & C.297-39-2 dated 20th Nov.1939 and your demi-official letter No. D.2996-I & C.299-39-12 dated 7/9th Dec.1939, on the above subject, I have the honour to submit herewith the report No.282 dated 12th Dec.1939 with its enclosures containing information regarding the equipment available in several workshops, which I have received from the Industrial Engineer.

I have the honour to be,
Sir,
Your most obedient servant,

M Ramachandra Rao
Director.

SRS

App. F. VI, G. 10

Government of His Highness the Maharaja of Mysore.

GENERAL AND REVENUE DEPARTMENTS

P. B52 22/7/40

Re-distribution of work among the several Govt. Workmen and Factories.

Issue orders on the report of the Industrial Engineer on the question of ———

G. O. No. D. 239-42 ORE 297-39-4 DATED 13-7-40.

May this be

i. printed? Yes

ii. treated as a standing order? Yes

iii. published in the Gazette, English Part? No

iv. translated? No

v. placed at the disposal of the Press? No

vi. published in the Gazette, Kannada Part? No

22/7/

Yes
22/7/40

Ir C 297-39-4.

PROCEEDINGS OF THE GOVERNMENT OF H.H.
THE MAHARAJA OF MYSORE.

READ:

Correspondence ending with letter No. D2-348/39-40 dated 13th December 1939 from the Director of Industries and Commerce, forwarding, with his remarks, the report of the Industrial Engineer on the exaimination of the details of the equipment of each of the Government Workshops etc., together with proposals for the re-grouping of work in the several Government Workshops and Factories.

2. Un-official Note No.1518 dated 18th April 1940 from the Government Director, ~~of~~ Industrial Concerns, furnishing his remarks on the suggestions of the Industrial Engineer.

3. Letter No.D2.348/39-40 dated 23rd April 1940 from the Director of Industries and Commerce forwarding a note by the Industrial Engineer and Superintendent, Central Industrial Workshop, as regards the allocation of work between the Central Industrial Workshop and the Government Electric Factory.

ORDER No. DV39-42/ Ir 297-39-4

BANGALORE, dated 13/7/ 1940.

There are now several workshops under the control of Government, ~~like~~ such as, the Central Industrial Workshop, the Railway Workshop and the Workshops ~~in~~ of the Electric Factory, Bangalore, and the Mysore Iron and Steel Works, Bhadravati. They are variously equipped with machinery designed ~~to~~ for ~~undertake~~ different kinds of work. With a view to ensuring that there is no ~~overlapping in any~~ unnecessary duplication of

~~of the~~ machinery ~~forming the equipment of several workshops and to see~~ that the distribution of work among ~~such shops~~ are made ~~having~~ regard to ~~the~~ suitability ~~of the workshops~~ for ~~undertaking particular kinds of work~~, it was found desirable to examine the details of the equipment of each of the workshops and also analyse and classify the several kinds of work now undertaken by them. Mr.B.G. Appadorai Mudaliar, Industrial Engineer (now Director of Industries and Commerce) was accordingly placed on special duty for the purpose.

2. ~~The Industrial Engineer~~ has ~~now~~ submitted an inventory of the machinery in the marginally noted* concerns, as also a report ~~as to~~ the equipment that is suited for each workshop, the equipment that may be transferred to other workshops and the classes of work that may be allocated to each shop.

* 1 The Mysore Power & Lighting Workshop.
2. The Mysore Iron & Steel Works.
3. The Government Electric Factory.
4. The Central Industrial Workshop.

3. An important feature of the report is that it brings to light the need for greater co-ordination and consultation between the several workshops than obtains at present, and for a rational plan of handling and developing specialised lines of work in the workshops or factories best fitted for ~~it~~, instead of each ~~of their~~ trying to do everything. Government accept the suggestion and direct that further discussions proposed in paragraph 3 of the report be pursued.

4. The Government Electric Factory will, in future, concentrate its attention ~~in~~ on expanding the operations connected with the manufacture of transformers, switch-gear, electric fans, ~~etc.,~~ and such ~~of those~~ other electrical accessories as ~~could~~ can be manufactured. It will ~~xx~~ also develop the production of galvanised hardware articles which are in constant demand in the electrical engineering field.

5. Government also approve the following suggestions made by Mr. Appadorai Mudaliar:-

(1) ~~Transfer~~ of certain machines between ~~the~~ Bhadravati Iron & Steel Works, ~~the~~ Central Industrial Workshop and the Government Electric Factory.

(2) ~~The~~ ~~Transfer~~ of the Foundry Section from the Electric Factory to the Central Industrial Workshop.

(3) ~~The~~ ~~Transfer~~ of the Transformer Section from the Central Industrial Workshop to the Government Electric Factory.

6. Government agree with the Government Director~~x~~, Industrial Concerns, that the Forging Section be ~~best~~ continued in the Government Electric Factory as at present and direct that detailed proposals be submitted for orders on the suggestion to equip the Factory with the Nut Forging and Tapping Equipment.

7. ~~The~~ ~~Shifting~~ transfer and concentrating of machinery approved in this order would involve changes in the ~~the~~ Capital ~~account~~ and ~~the~~ Working Capital account. Government are pleased to direct that the Assistant Comptroller in charge of the Industrial Audit be associated with the presiding officers of the respective concerns and that this part of the work be also ~~got~~ ~~completed~~.

l.c/

9/7/40

Ce/10/7

SECRETARY TO GOVERNMENT,
DEVELOPMENT DEPARTMENT.

To

The Director of I.& C.
The Govt. Director of Indl. Concerns.
The Comptroller to Govt. through F.D.
The Chairman, M.I.S.W.

Appendix F G—1]

SUBJECT.....

.....

.....

Diary No. of letter replied to.....

General and Revenue Secretariat

( )

the *19*

Date of issue 27/1/41

Signed by .....

List of enclosures (Pages 28 to 35 & two Notes in DC 297-39) T

Copied by .....

Examined by .....

Section

File No.

Serial No.

No. D 35 Genl

To The chairman M/Sw, Bldg

Sir,

With ref to your Do no: 56 D 20th Aug 1940 requesting for copies of G.O (2nd) / D 239-42/Rec 297-39 D 13 Aug 1940 Re: Redistribution Work among the Several Govt Workshops, I am directed to forward a five copies of the G.O. cited for your reference together with copies of the two Notes (2) cited therein and a copy of the draft. I have the honour to be,

Sir,

Your Obedt Servt

Sd/-

WD 086—GPB—40,000—30-7-40

Appendix F G—1]

SUBJECT.....

.....

.....

Diary No. of letter replied to.....

General and Revenue Secretariat

( )

the *19*

Date of issue 6/2/41

Signed by Mr. G. M.

List of enclosures.....

Copied by .....

Examined by .....

Section

File No.

Serial No.

No. D. 3647.

To

The Superintendent, Govt
Printing

Sir,

I am directed to
request you kindly to return the
original report
of the Industrial Engineer
re: allocation of the work among
the Govt Presses with
~~Ref~~ printed in connection
~~letter~~ with G.O. No. 1232-42/12-
237-39-4 dated 13th July 1940.

I have etc

3/1

for Secy to Govt

Vis
3/1

GOVERNMENT OF HIS HIGHNESS THE MAHARAJA OF MYSORE

General and Revenue Secretariat

No. D 5807

Dated, Bangalore, 6 May 1941.

From

The ~~Chief~~ Secretary to the Government of His Highness the Maharaja of Mysore

To

Development Department

The Superintendent,

Government Printing, Bangalore.

Sir,

I am directed to request you to return the original report of the Industrial Engineer regarding allocation of work among the several Government Workshops sent with Government Order No.D.239-42/I & C 297-39-14 dated 13th July 1940.

I have the honour to be
Sir,
Your most obedient servant,

Secretary to Government,
Development Department.

Aga/2.

Appendix F G—1]

SUBJECT.....

.....

.....

Diary No. of letter replied to.....

General and Revenue Secretariat

( )

the *19* .

Date of issue 6/5/44

Signed by Mr Lyon

List of enclosures.....

Copied by .....

Examined by .....

Section Sec

File No.

Serial No.

No. D5807

To The Superintendent, Govt. Printing

Sir,

I am directed to ~~Ltr. reference~~ request you to return the original report of the Industrial Engineer re: allocation of work among the several Government workshops sent ~~for~~ herewith Govt. no. D 2332-42/Sec-291-39-44 dated 13th July 1940.

I have etc.

Secy to Govt.

Dep

Telegrams : PAPYRUS.

OFFICE OF THE SUPERINTENDENT,
GOVERNMENT PRINTING IN MYSORE,

No. P. W 1781 Bangalore, dated 12th May 1941

13 MAY 41 GOVT. OF MYSORE
4762 13 MAY 41 SECRETARIAT.

FROM

B. KRISHNASWAMY CHETTY, ESQ., B.E., A.R.P.S., M.A.S.M.E.,
SUPERINTENDENT, GOVERNMENT PRINTING,
BANGALORE.

To

The Secretary to the Government of His Highness
the Maharaja of Mysore, Development Department,
Bangalore.

Sir,

Ref:- Original Report of the Industrial Engineer regarding allocation of work among the several Government Workshops.

With reference to your letter No.D.5807 dated the 6th instant, I have the honour to state that the abovementioned original copy has been sent to your office on the 14th Dec.40 along with printed copies of the G.O.No.D.239-42/I.&C.297-39-4, dated the 13th July 1940, and that it has been acknowledged in the despatch register of this office.

I have the honour to be,
Sir,
Your most obedient servant,

Superintendent. 12/5/41

RC.

Allocation of work between the Central Industrial Workshop and the Government Electric Factory.

Central Industrial Workshop.

This is a service workshop to the Electrical Department (Superintendent, Bangalore Power and Lighting) the Well-Boring Section, the Department of Public Works and other Government Departments. Miscellaneous works generally of the character of repairs to existing machinery are undertaken in this connection.

The workshop is however equipped to deal with stock orders for agricultural implements, construction of structural work like trusses, tanks, gates, railings etc. and manufacture of small machinery that may be required for rural development like pumps etc.

Government Electric Factory.

This may be developed as a regular manufacturing concern not troubling about repairs or service work which may be left to the Central Industrial Workshop as now.

Transformer manufacture is a very important line at present. According to Government Order this work is to be specialised and concentrated here.

Water meter work is also started and may be developed further.

With the highly accurate machinery installed in the factory it is possible to tackle jobs requiring precision in the course of manufacture like surveying instruments, laboratory apparatus etc.,

---

"Copy"

For Secretary to Government,
Development Department.

K.M.R.2.

The investigation carried out by Mr.Appadurai Mudaliar has been useful in that it not only furnishes an up-to-date inventory of the machinery and equipment in the concerns under reference, but also brings to light the need for greater co-ordination and consultation between the several shops than obtains at present, and for a rational plan of handling and developing specialised lines of work in the Workshops or Factories best fitted for it, instead of each of them trying to do everything.

2. I think it would be quite useful if the detailed further discussions which Mr.Appadurai Mudaliar proposed in para 3 of his note, to have with each concern re: means of improvement, rationalisation, readjustment etc., are pursued when the results of the investigation made by him are still fresh in his mind.

3. As far as the Government Electric Factory is concerned, it will concentrate its attention in expanding the operations connected with the manufacture of Transformers, Switch gear, Electric fans etc., and such of those remunerative electrical accessories as could be manufactured. It will also develop the production of galvanised hardware articles which are in constant demand in the Electrical Engineering field.

4. The report also makes some helpful suggestions re: the transfer of certain machines between Bhadravati, the Central Industrial Workshop and the Government Electric Factory.

5. I agree to the transfer of the machines suggested by Mr. Appadurai Mudaliar from the Government Electric Factory to the Central Industrial Workshop or the Mysore Iron and Steel Works.

6. Mr.Mudaliar has suggested that the Forging Section should be transferred to the Central Industrial Workshop. I am rather in favour of the Forging Section being continued at the Electric Factory for the manufacture of electrical and other hardware which are much in demand, and are being produced and sold in increasing quantities. It may be necessary that a Nut Forging and Tapping equipment should be added to the existing Forging equipment to meet the heavy demand, as suggested in the report.

7. I agree that the Foundry Section may be transferred to the Central Industrial Workshop.

8. With regard to Surplus Stores, a list of articles that have not moved fast for the last two years is being prepared and will be circulated among the different industrial concerns as suggested by Mr. Appadurai Mudaliar.

"Copy"

For Secretary to Government,
Development Department.

K.M.R.2.

Allocation of work between the Central Industrial Workshop and the Govt.Electric Factory.

Central Industrial Workshop:

This is a service workshop to the Electrical Department (Superintendent, Bangalore Power & Lighting), the Well-Boring Section, the Department of Public Works and other Government Departments. Miscellaneous works generally of the character of repairs to existing machinery are undertaken in this connectio

The workshop is however equipped to deal with stock orders for agricultural implements, construction of structural work like trusses, tanks, gates, railings etc., and manufacture of small machinery that may be required for rural development like pumps etc.

Government Electric Factory:

This may be developed as a regular manufacturing concern not troubling about repairs or service work which may be left to the Central Industrial Workshop as now.

Transformer manufacture is a very important line at present. According to Government Order this work is to be specialised and concentrated here.

Water meter work is also started and may be developed further.

With the highly accurate machinery installed in the factory it is possible to tackle jobs requiring precision in the course of manufacture like surveying instruments, laboratory apparatus etc.

B.V. Raghavachar

Superintendent,
Central Industrial Workshop,
Bangalore.

"Copy"

AVR:RNS3.
11-4-40.

B.P. Mudaliar

Director.

S. O.

GOVERNMENT OF HIS HIGHNESS THE MAHARAJA OF MYSORE.

GENERAL AND REVENUE DEPARTMENTS.

G. O. No. D. 239-42—I. & C. 297-39-4, dated 13th July 1940.

Redistribution of work among the several Government Workshops.

Passes orders on the report of the Industrial Engineer on the question of ——

READ—

Correspondence ending with letter No. D2. 348—39-40, dated the 13th December 1939, from the Director of Industries and Commerce in Mysore, forwarding, with his remarks, the report of the Industrial Engineer on the examination of the details of the equipment of each of the Government Workshops, etc., together with proposals for the re-grouping of the work in the several Government Workshops and Factories.

2. Un-official Note No. 1518, dated the 18th April 1940, from the Government Director, Industrial Concerns, furnishing his remarks on the suggestions of the Industrial Engineer.

3. Letter No. D2. 348—39-40, dated the 23rd April 1940, from the Director of Industries and Commerce in Mysore, forwarding a note* by the Industrial Engineer and Superintendent, Central Industrial Workshop, as regards the allocation of work between the Central Industrial Workshop and the Government Electric Factory.

(*Printed as Annexure)

ORDER NO. D. 239-42—I. & C. 297-39-4, DATED BANGALORE, THE 13TH JULY 1940.

There are now several workshops under the control of Government, such as the Central Industrial Workshop, the Railway Workshop and the workshops of the Electric Factory, Bangalore, and the Mysore Iron and Steel Works, Bhadravati. They are variously equipped with machinery designed for different kinds of work. With a view to ensuring that there is no unnecessary duplication of machinery and that the distribution of work among the several workshops is made with due regard to their suitability for the work to be entrusted to them, it was found desirable to examine the details of the equipment of each of the workshops and also to analyse and classify the several kinds of work now undertaken by them. Mr. B. G. Appadurai Mudaliar, Industrial Engineer (Now Director of Industries and Commerce), was accordingly placed on special duty for the purpose.

2. Mr. Appadurai Mudaliar has submitted an inventory of the machinery in the marginally noted concerns, as also a report about the equipment that is suited for each workshop, the equipment that may be transferred to other workshops and the classes of work that may be allocated to each workshop.

1. The Mysore Power and Lighting Workshop.
2. The Mysore Iron and Steel Works.
3. The Government Electric Factory.
4. The Central Industrial Workshop.

3. An important feature of the report is that it brings to light the need for greater co-ordination and consultation between the several workshops than obtains at present, and for a rational plan of handling and developing specialised lines of work in the workshops or factories best fitted for them instead of each trying to do everything. Government are pleased to accept the suggestion and to direct that the further discussions proposed in paragraph 3 of the report be pursued.

4. The Government Electric Factory will, in future, concentrate its attention on expanding the operations connected with the manufacture of transformers, switch-gear, electric fans and such other electrical accessories as can be manufactured there. It will also develop the production of galvanised hardware articles which are in constant demand in the electrical engineering field.

5. Government also approve the following suggestions made by Mr. Appadurai Mudaliar.

(1) The transfer of certain machines between the Bhadravati Iron and Steel Works, the Central Industrial Workshop and the Government Electric Factory.

(2) The transfer of the Foundry Section from the Electric Factory to the Central Industrial Workshop.

(3) The transfer of the Transformer Section from the Central Industrial Workshop to the Government Electric Factory.

6. Government agree with the Government Director, Industrial Concerns, that the Forging Section be continued in the Government Electric Factory as at present and direct that detailed proposals be submitted for orders on the suggestion to equip the Factory with the Nut Forging and Tapping Equipment.

7. The transfer and concentration of machinery approved in this order would involve changes in the capital and the working capital accounts. Government are pleased to direct that the Assistant Comptroller in charge of the Industrial Audit be associated with the presiding officers of the respective concerns and that this part of the work be also done.

C. E. NORONHA,
Secretary to Government,
Development Department.

To—The Director of Industries and Commerce in Mysore.
The Government Director, Industrial Concerns.
The Comptroller to Government through the Financial Secretariat.
The Chairman, Mysore Iron and Steel Works, Bhadravati.

Exd.—S. R.

WD 132—GPB—350—26-11-40

No. D. 239-42—I. & C. 297-39-4, DATED 13TH JULY 1940.

ANNEXURE.

To

THE DIRECTOR OF INDUSTRIES
AND COMMERCE IN MYSORE,
BANGALORE.

SIR,

Investigation to examine the details of the equipment of the Government Workshops.

In accordance with your Memo No. B. 24—39-40, dated 9th November 1939 and in continuation of my letter No. 258, dated 1st December 1939, on the above subject, I have the honour to submit herewith the report in duplicate with necessary statements.

I have the honour to be
Sir,
Your most obedient servant,

B. G. APPADURAI MUDALIAR,
Industrial Engineer.

Enclosures.

1. Report
2. Statements: A, B & C.
3. Letter from the Works Manager, Mysore State Railway.
4. Letter from the General Manager, Mysore Implement Factory.
5. Details of machinery, etc., in the Mysore Power and Lighting Workshop.
6. Do in the Mysore Iron and Steel Works.
7. Do in the Government Electric Factory.
8. Do in the Government Central Industrial Workshop.

REPORT ON THE INVESTIGATION OF THE DETAILS OF THE EQUIPMENT OF THE GOVERNMENT WORKSHOPS.

In accordance with the memo of the Director of Industries and Commerce in Mysore, I visited the Government Electric Factory for two days, the Mysore Iron and Steel Works for four days, and the Mysore Power and Lighting and Railway Workshops for two days. Before visiting each place, I sent a reference to the head of each of the concerns to prepare statements of the details of machinery and the work carried out for the previous two or three months in the workshop of each of these concerns. The necessary statements of the Central Industrial Workshop were also prepared. I have enclosed copies of these statements with this report. The Railway Workshops and the Mysore Implement Factory have not sent any of the statements, but have written letters which explain the situation in each case, copies of which are enclosed.

With these lists readily available, I had the opportunity to understand clearly the situation in respect of the equipment and work done in each workshop. I had talks with the heads of the institutions concerned and particularly with the sectional officers. By this method, I have been able to get a better idea of the matter under investigation and in all cases, I have arrived at conclusions after discussing the matter fully with them.

I propose to discuss in detail the situation in each concern with reference to the terms of investigation. I will suggest during the course of

the discussion, the ways and means whereby the equipment could be improved or added on, and the work could be carried out in a more rational manner than hitherto under the new scheme under investigation. I have found that in all cases, it would be possible with a little re-adjustment in equipment and proper distribution of works suited to such equipments or facilities available in each workshop, they could be made to work more economically, and the machinery in each could be more or less fully employed. In the case of the Government Electric Factory, I have made suggestions for utilising the stores available in a more rational manner. This method will obviate considerable losses inherent in the method of auctioning surplus stock.

After the discussions indicated above with respect to each concern, I will offer general recommendations as to the procedure that may be adopted to bring about the results in view. However, I wish to stress that certain suggestions which bear on the details of equipment given under each concern, may also be considered, as this will tend to improve the concerns by slight re-adjustments without any extra cost to the Government. The only instance where I have suggested fresh equipment is, in the case of bolts and nuts manufacture, wherein a nut-forging and tapping equipment is quite necessary.

The workshops that are chiefly affected in this investigation are the Government Electric Factory, the Central Industrial Workshop, the Mysore Power and Light Workshop, and the workshops in the Iron and Steel Works. The total value of machinery as stated in the lists amounts to Rs. 3,64,949. This does not, however, represent the total capital outlay, which includes the cost of small tools, the driving arrangement, the building, etc.

The investigation has shown that by rationalising the working of the different workshops so that special machines or appliances available in each workshop which may not be fully employed, can be put to better use, greater economy in outlay on capital can be effected and works which each concern may consider unable to take up for want of such facilities, may be taken up, with the knowledge that special facilities are available in the other concerns.

For this purpose, it is necessary to devise a central organisation which can deal with all works to be done, and apportion these in accordance with the equipment or facilities available in any workshop. Alternatively, the officers of the concerns should be supplied with all the necessary information needed to help them to judge where a particular work or part of such work could be got done efficiently and economically. To avoid tendering or quoting on a competitive basis by the associated workshops, only one such concern should tender or quote for any work. Uniformity in estimating will result after some experience is gained, by adopting this procedure. In the initial stages, the officers of the concerns should work with mutual goodwill and consult each other where necessary, before tendering. With the adoption of the principle of getting the work done, if necessary, either fully or in part, in any of the concerns, the tenders are bound to be competitive and more work can be secured for the associated workshops. The officers of the Mysore Iron and Steel Works agree to this proposal.

INTERCHANGE OF MACHINERY AND WORK WHERE AND WHEN NEEDED.

It is necessary to re-adjust the machinery and appliances, so that each concern may be fully equipped for the lines of work that it is capable of taking up. Even in well-managed workshops, there are always costly machinery idle, for most of the time, though it may be needed, as an important part of an operation cannot but be provided for. For example, in the Railway Workshops, the horizontal boring machine and the surface grinding machine could be made use of by any of the other workshops, as these are not by their very nature, in full use all the time, but they are at the same time absolutely necessary for the Railway Workshop. Similarly, the valuable horizontal boring machine and the big planer, the big hack-saw machine, available in the Government Electric Factory, could be used fully in the Iron Works workshop. The Central Industrial Workshop and the Government Electric Factory workshop can get any special work which needs these machines done at the Mysore Iron and Steel workshop especially when such works are not of common occurrence in these workshops.

With this object in view, I have recommended certain re-adjustments of the machinery which are only few in number. Some of the officers are under the impression that valuable machines will be removed from their concerns and their work will suffer. But such valuable machinery will be fully employed elsewhere and their use will be available to the particular concern and all the other concerns as well.

I am of opinion that all the workshops put together are fairly well-equipped to tackle all conceivable jobs that may arise, except for the addition of nut-making equipment for the Government Electric Factory. I think no more additions of capital nature may be needed for some time to come, at least, if all the workshops work on the lines indicated. This combination can take care of a greater output in the case of each workshop which is not possible at present.

STANDARDISATION.

In my discussions with the sectional officers of the Mysore Iron and Steel Works workshop, an important point was touched upon. This is the necessity for standardisation. It is my experience as well as that of the officers of the Iron Works workshop that unnecessarily multiplying types and designs make it difficult to cope up with work efficiently and urgently. Valuable patterns have to be scrapped and new ones made each time; thereby increasing the cost and causing delay in the execution of works. In this case, the customers concerned are practically all Government departments. To give an instance, the design of a road-box, or surface plate or any special article, is changed often. It is not clear why these designs should not be thought out carefully and standardised. There are other instances, such as sluice shutters, screw rods and other requirements, where a few standard designs could be adopted for all parts, except perhaps for the actual sizes of the shutters. These examples are only given at random to illustrate the need for standardisation as far as possible. This will help the Government departments themselves in getting their work done economically and without undue delay.

WORK ORDERS FROM GOVERNMENT DEPARTMENTS AT REGULAR INTERVALS.

There is a tendency on the part of some of the Government departments to place orders for execution of work sometimes of heavy nature on a rush basis at the tail end of the official year. If orders are placed earlier and at regular intervals, the machinery and men could be more uniformly and efficiently employed. Working over time and hurrying through, increases the cost of manufacture.

MANUFACTURE.

As indicated already, manufacture of machines of certain types can be undertaken by any workshop, as it will be possible to get parts that could not be made before, in any of the other workshops. Manufacture of spares for textile factories may lead to the starting of a loom manufacturing concern at Bhadravati. The manufacture of water-supply fittings can also be developed.

JOINT CONSULTATION.

Some means should be provided to bring together all the Chief Officers of the concerns together at regular intervals, so that they may exchange their views and review their difficulties.

I may also mention here that the system of obtaining work on tender basis from the Stores Purchase Committee has had the tendency to make the officers watch carefully all costs, and have a strict supervision over labour.

I have indicated under appropriate heading the points that directly bear on the terms of reference of my investigation.

I have enclosed statements A, B and C. Statement 'A' shows the volume of work done in each concern for a given period of time and its distribution under different heads. Statement 'B' shows how re-adjustments of machinery could be effected for efficient work; Statement 'C' shows the special nature of machinery available in each concern and how it could be made use of by the others.

No. D. 239-42—I. & C. 297-39-1, DATED 13TH JULY 1940.

SURPLUS MACHINERY AND STORES.

I have also kept in view during this investigation to find out how best the surplus stores could be utilised and the surplus machinery disposed of. In the Government Electric Factory, there is quite a lot of stores of considerable value which has not moved for a considerable time. I recommend that a list be made and sent to all the concerns and they be requested to indent for any part of the articles in this list when they need such an article. This is a better idea than to request the concerns to indicate what they want and take such stock. They will usually reply that they do not need them as their requirements in special stores cannot be foreseen. But, by keeping the stock and letting the concerns indent what they want when they need, the stock will move and fetch a good price. Auctioning is not a desirable method in this case.

It is seen from the study of the list of machinery prepared by all the workshops that most of the machinery are old or second-hand. They serve the purpose for which they are meant fairly well. I think that we have enough machinery of this kind taking all workshops together. In future, all purchases should be of new and up-to-date machines as we are handicapped in doing works of accuracy. The need for such accurate machines will arise when manufacture of even simple machines is taken up.

It is seen from the study of the nature of work done in different concerns that in almost all cases private works taken up are of negligible dimension. This shows that the springing up of workshops all over the State has taken away such works. Only in cases of emergency or when the job is of a special nature do private parties resort to Government concerns.

THE MYSORE IRON AND STEEL WORKS, BHADRAVATI.

I spent four days in studying the details of equipment of the workshops of the Mysore Iron and Steel Works. These consist of the Machine Shop, Forging Section and the General Foundry and Structural Work Section.

The statements relating to machinery in different sections show that they are all suited to the special needs of the works. Especially after the starting of the Paper Mills and the Cement Factory, there is ample work for maintenance of the plant of all these concerns. This is shown in the statement showing quantity of castings made in the General Foundry under works, maintenance and sales. The quantity of work done for private parties is negligible. As the castings have to be machined and otherwise made suitable for use, a good quantity of these castings go through the Machine Shop. The Forging Section also adds to the work of the Machine Shop.

The total value of machinery is Rs. 1,81,023-11-1 as per machinery lists enclosed and it is meant for work mostly not requiring great accuracy. Except two lathes (items 5 and 6 in the machinery list) and some small machines, all the other items of machinery have been purchased second-hand. For the type of work they have generally to do with, such as machining flanges of pipes and specials and drilling bolt holes, they are suitable and are fully employed. Most of these machines are of heavy type and can be used economically, only on big jobs. I will discuss this point under Foundry again. It is not economical to undertake small works and use heavy appliances and machines to cast or machine them.

The Machine Shop has a big planing machine (item 37 in the Machine Shop list), gear shaper and the two milling machines (items 27, 28 and 29), a hydraulic press (item 40 in the list) and a plate-bending machine (item 41), which can take up outside work of special nature. The other workshops may get done any special work which requires the use of these machines, at the Mysore Iron and Steel Works. As I have already remarked, jobs of a type that need such special machines are not of regular occurrence and if the other workshops know such facilities are available at the Iron Works, they can make use of them. The Mysore Railways may possibly make use of these by sending heavy works suitable for these machines. There is the advantage here of getting heavy parts cast and machined at the same time.

No. D. 239-42—I. & C. 297-39-4, DATED 13TH JULY 1940.

I have already mentioned under the Government Electric Factory that certain machines may as well be spared to the Iron Works where they can be put to greater use. In all cases, it is desirable to find out where the heaviest work is likely to occur for a particular machine and to have it available there. I have kept this in view in recommending the transfer of machines, even though they may be needed occasionally in a particular concern.

The statements showing the nature of work turned out for three months (copies enclosed) show that the workshops are fully employed except for the use of certain machines, mostly for maintenance and additions to the Iron Works and the other two factories. The maintenance work is usually heavy when all the three concerns are taken together. It is not economical to do small jobs in this workshop. Because, for the floor space taken up and the cost of equipments, such as cranes which are there whether they are used or not, they will not pay. Neither will small jobs pay in the Machine Shop, if they are put on heavy machines. I therefore recommend, and in this the workshop officers also agree, that all small jobs unless they are of local origin, may be got done by the other workshops in Bangalore, *vice versa* all heavy jobs may very well be got done economically in the Iron Works' workshop. All works, such as small castings like road-boxes, etc., from Mysore and Bangalore may be got done in the workshops at Bangalore (*vide* statement showing the nature of the work done). This will avoid expensive machining and fitting costs with unsuitable machines and insufficient facilities.

A careful study of the work turned out shows that the foundry, machine shop and structural shops are meant for heavy work. Light works or small works will be uneconomical in execution. Such works, unless of a special or urgent nature, may be got done by the other concerns.

However, large numbers of small articles can be cast with profit by providing additional space at a cheap cost. No crane or other expensive mechanical lifting agency will be needed. For example, there is a great demand for spare parts for textile machinery, such as loom parts, especially after the war. If we start with making the spares and gain experience, we may ultimately develop loom manufacture under private agency. Manufacture of water-supply fittings also will be a profitable industry. These may be developed as separate agencies. I am glad to find that chilled rollers and dies are being cast successfully. The Iron Works could be made use of for this type of work by all the other workshops including the Railway Workshops. Manufacture of rolling machines and Die-presses for tile factories and brass foundries can be undertaken by the workshops as a profitable line of work. Phosphor bronze castings for heavy duty machines could be got done in the Central Industrial Workshop where this type of work has been perfected after considerable experience in carrying out works of this nature for the Mysore Sugar Co., Ltd.

GOVERNMENT ELECTRIC FACTORY.

The Government Electric Factory consists of the following sections :—

(1) Bakelite pressing	(6) Machine Shop
(2) Instrument Making	(7) Forging Section
(3) Transformer Making	(8) Carpentry Section
(4) Electro-plating	(9) Foundry Section
(5) Electric Laboratory	(10) Die-sinking Section.

(2) For my purpose, I consider items Nos. 3, 4, 6, 7, 8 and 9. The value of the equipment and plant in the Machine Department consisting of Machine Shop proper, Foundry and Carpentry sections and the Forging section is Rs. 1,25,780.

(3) The transformer manufacture is carried on partly in the Electric Factory and partly in the Central Industrial Workshop. As the major portion of the manufacturing work is carried out by the electrical equipment, the whole work could be centralised by carrying out the manufacture of shells also at the Electric Factory. For this purpose, the transformer section could, with advantage, be transferred from the Central Industrial Workshop to the Government Electric Factory.

(4) *Electro-plating.*—Such of the works as are required to be plated in any of the Government Workshops in the State could be got done in the Electric Factory. For the present, there is not much work of this type in the other workshops.

(6) *Machine Shop.*—By studying the requirements of the Government Electric Factory and other workshops, I recommend that the big planing machine (item 4 in the machinery list of the Government Electric Factory), the boring mill (item 6 in the same list) and the big sawing machine (item 2 in stores list) be transferred to the Iron Works' workshop, and the punching and shearing machine (item 9 in the forging section list) may be given to the Central Industrial Workshop where it can be used with advantage.

The following items which could be spared, could be used in the Smithy centres at Mandya and Closepet where we need these machines, to improve quality and quantity of work turned out: —

(1) Drilling machine (item 25 in the Machinery list).

(2) Drilling machine with 2 H. P. motor can be used in one of the centres (item 1 in screw-cutting section).

(7) *Forging Section.*—They are producing mainly bolts and nuts in this section. This is a remunerative line just now. The chief defect is want of a nut-forging machine. The nut-tapping machine may also be needed. Without this addition, the output cannot be increased. Buying these in the market for supplying them with bolts will increase the cost of the product. For the time being, the nut-tapping machine available may be made use of, but the nut-forging machine is absolutely necessary.

Rivets of standard sizes may profitably be made in quantities. Also dog-spikes for the railways may be taken up. There should be a good demand for these two kinds of articles.

(9) *Foundry Section.*—This is not properly designed. There are more cupolas than necessary for work. The blower for the one cupola in action is not suitable. The floor space for castings is limited and not properly made. There is not an enough number of mould-boxes of sizes for a reasonable quantity of castings to be made at suitable intervals. There is no core-oven in the foundry. This is an important omission. Drying cores and portions of moulds with open fire is wasteful and will increase the cost of the castings. In other words, either the foundry has to be equipped suitably or the castings have to be done in the Central Industrial Workshop. One of the two cupolas in the foundry can be given to the Central Industrial Workshop (item 30, page 6 in the machinery section list).

Structural Work.—All kinds of structural work can be carried out in the Central Industrial Workshop. There are no proper facilities for this type of work in the Government Electric Factory.

(10) *Die-sinking.*—This section is well equipped. For die-making, special steel has to be used, as the wear and tear on the dies is rather heavy. With this improvement and a little publicity there will be a good demand for these articles and the section can be made to work profitably.

The men employed should be of a more skilled type for two reasons: firstly the work is always of a skilled type and the machinery is delicate and costly. Almost all the machinery in this section is new. There are few workshops in India equipped with such machinery.

The Machine Shop and Foundry are engaged in making lathes, drills and a shaping machine for stock. When this work is completed, most of the machines will not be fully employed. I have therefore suggested later, the amalgamation of certain of the sections of the Government Electric Factory with the Central Industrial Workshop.

General.—The Government Electric Factory workshop is equipped for making electrical and bakelite articles. With the addition of the transformer section of the Central Industrial Workshop, the usefulness of this department in the Electric Factory will increase. The bakelite pressing and the instruments making and repairing can be expanded. Die-sinking can serve a useful purpose not only within Mysore, but outside also. If proper material is used, a good business can be developed in this line. All these four sections and probably electro-plating section are specialities of the Government Electric Factory.

No. D. 239-42—I. & C. 297-39-4, dated 13th July 1940.

Transfer of Machinery.

Machine Shop, Forging and Foundry sections are not fully employed. Some machines in the Machine Shop as indicated can be sent to the Iron Works where they can be utilised with greater advantage.

Use of Big Press.

The big press which is lying about in the yard, if erected will be able to make lamp-shades and other pressed work which cannot be pressed by hand. With lathes and other appliances available and as the enamelling work can be done in a local concern, there is a good future for this type of manufacture. The die section and the machine shop can take up this work easily.

The Electric Factory can undertake to manufacture simple machines on order. Their equipment is suited for this kind of work. Certain amount of repairs to machinery can also be undertaken. Their equipment is not quite suited for carrying out of accurate work.

The forging of bolts and nuts can, with the addition of a nut-forging machine, be made into a useful section. They can however make dog-spikes and rivets for Mysore Railways and for sale. Only standard sizes of rivets and bolts commonly required should be made for stock.

In the Electric Factory there are sufficient appliances including a big power press which, with a few minor additions, should be able to take up steel and brass pressings of all kinds. Due to war conditions, there will be a profitable field of operation in this line.

Stores.

In the statement attached, the value of work done by the Machine Shop and Forging Sections is given at Rs. 5,362 for three months as against the total value of Rs. 24,062 worth of work for the whole factory during the same period. It is seen that there is a good stock of bolts and nuts and rivets. These are mostly sizes not in common use. These can be re-done to make them saleable. This can easily be done. Most of these could be used in the Mysore Iron and Steel Works, Railways or in the Central Industrial Workshop, if they are informed of the availability.

Sections of Tool-steel and other Iron.

There are quite a large amount of stores, such as tool-steel, and sections of mild steel in the stores which have not moved for a considerable time. I suggest that these may be utilised in the different concerns. For example, they have a number of grinding wheels which the Central Industrial Workshop can take over immediately.

Copper and Gun metal scrap—(Of old Distillery).

These can be given to the Central Industrial Workshop for their use.

I suggest that a complete list of all surplus stores be made and lists sent to all the concerns. Generally such concerns will reply that they do not need them. This is because, each one is afraid to take in stock which may ultimately become dead stock. To avoid these, such concerns as need any material in the list for any specific need, may indent on the Government Electric Factory. This will help to liquidate the surplus stock in an advantageous manner.

Government Central industrial Workshop.

Machinery.—The machinery in the Machine Shop are all old, except a shaping machine and two lathes. The present value of the machinery as per lists enclosed is Rs. 50,391-8-0. The foundry is fairly well-equipped for its output. We have a compressor and tools worked by compressed air recently installed which are proving very useful. There are certain items of machinery shown as not useful. They will not serve any useful purpose in being transferred to any other concern. They are used in times of heavy work for getting through rough jobs. The transformer section is also fairly equipped for making transformer shells of different types

ncluding shells wi th fins. The smithy is in a position to do structural steel works, such as cross arms, etc., for the Electrical Department, sluice gates and shutters, and tanks to the Public Works Department and large tanks for the Mysore Sugar Co.

The workshop is fairly well-equipped for the manufacture of simple machines and agricultural implements and for carrying out repairs to machinery and supplying spare parts to the Mysore Sugar Factory and other local concerns. The Workshop is handicapped in taking up jobs such as heavy castings and large parts for machining and fitting, for want of heavy or special type of machinery. Such works in future could be handled by the Mysore Iron and Steel Works workshop. Their Foundry will get some relief in letting us do all small jobs in casting and machining and fitting. They will therefore be able to take up jobs that require special facilities which are available there.

The Transformer section can go over to the Government Electric Factory, as already suggested by me in discussing the matter connected with that factory, thereby making a self-contained unit of transformer section in the Government Electric Factory.

Castings of gun-metal, brass and phosphor bronze may be specialised in the Central Industrial Workshop. The Electric Factory need not concern itself with this work. Also the castings of cast iron may be centralised in the Central Industrial Workshop where there are greater facilities and the work can be done economically. There is no need for a foundry in the Government Electric Factory, when the Central Industrial Workshop can serve the needs of the Electric Factory in castings of all kinds.

Bhadravati Iron Works may get their phosphor bronze castings in the Central Industrial Workshop where the method of producing articles of this type is perfected.

The Central Industrial Workshop should take up all the excess requirements of the Railway Workshop in brass and phosphor bronze castings. Special works involving accurate boring and grinding may be got done in the Railway Workshop, where these machines are not quite fully employed.

Works involving rough boring, pipe-flange-facing, etc., may be got done in the Electric Factory.

The Central Industrial Workshop can use up most of the surplus stores of the Electric Factory under the method of stores supply which I have already suggested.

These suggestions lead me to the conclusion that the workshops proper of the Government Electric Factory, *viz.*, the Machine Shop, the Forging, Foundry and Carpentry sections can be amalgamated with the respective sections of the Central Industrial Workshop. The two workshops put together will form a fine unit. The other sections of the Government Electric Factory, *viz.*, the Transformer manufacture, the Bakelite pressing, the Electro-plating, the Instrument section, the Die-making and the Electric Laboratory should form one unit. With the relief obtained, the management of the Electric Factory should be able to give better attention to the manufacturing side and further development.

The statement of work done for six months shows that we do very few private jobs. At one time we used to compete with private firms for private works in addition to Government works. Gradually, we have confined ourselves chiefly to Government Departmental works and to such jobs for private parties as cannot be got done elsewhere.

The Mysore Power and Lighting Workshop.

The equipment of this workshop is of a nature to maintain the power lines in good condition under the care of the Superintendent, Power and Lighting, Mysore and keep in stock such articles as are necessary for emergency work or repairs. One of the important functions of this workshop is, to give efficient and prompt service during the Birthday and Dasara festivities to the Palace and Government Departments in Mysore. The value of the machinery according to the list is Rs. 7,754.

The equipment is therefore meagre and consists of only six pieces of machinery of value, besides the forging section.

The men employed are of a type that could make themselves useful for any type of work.

The works turned out are straps, braces, cross arms, clamps and similar articles.

I agree with the note of the Superintendent, Power and Lighting, Mysore, that they are not equipped or, are in a position to take outside work in the usual course of business.

However my informal talk with the Assistant Superintendent and Foreman indicated that they can probably execute any special work of urgency to the local Government Departments during such periods as they are not fully employed either on urgent works during the festivities in Mysore or any particular scheme of urgency. Especially the lathes and the planing machines could thus be employed.

THE MYSORE RAILWAY WORKSHOPS, MYSORE.

I have already mentioned that I had received a reply from the Mysore Railway Workshop that their equipment was fully employed and in fact that they had requisitioned for additional equipment. They also carry out any work of urgency for Government Departments that cannot be got done elsewhere, at certain detriment to the progress of their work.

I, however, inspected the equipment in each section of the shops with the Works Manager and had a talk with him in the absence of the Loco. and Carr. Superintendent who was on deputation outside Mysore. It bore out clearly the statements made by him in his reference to me.

However, on my requesting him to explain how he manages to carry out all the works when he is not fully equipped for the volume of work on hand, he said that there was a good lot of brass work (Gun-metal fittings for locomotives and bearing blocks) that could be done elsewhere and it would afford him some relief till the new machinery arrived, if such works are given out. I requested him to send drawings and specifications for such parts and told him that I will be able to get them done in the Central Industrial Workshop, or pass them on to the other workshops for execution. Most of these parts are for stock against emergency use or repairs to locos in shops. They can be manufactured in the Central Industrial Workshop or in the Government Electric Factory or between them.

Among the machinery in the Machine Shop, the surface grinding and the boring machines which are accurate, could carry out any works requiring this type of machining or grinding, for the other workshops when these machines are not fully employed. The Mysore Iron and Steel Works, the Central Industrial Workshop or the Electric Factory may need the services of such machines occasionally and there is no object in making any provision for these machines in any of these workshops unless they take up standard manufacture of articles requiring the constant use of these machines.

I am taking up the matter of Gun-metal and other brass castings with the Railways separately to help them out of the difficulty and keep the Central Industrial Workshop and the Government Electric Factory employed more fully.

An important result of this development, *viz.*, the other three workshops in Bangalore, and Bhadravati working in co-operation to help the Railway Workshop, will be that in emergent cases, such as labour strikes, the other workshops can help the Railways to tide over the difficulty. From this aspect, I consider greater co-operation of the Railways with the other concerns is desirable.

THE MYSORE IMPLEMENT FACTORY, HASSAN.

I sent a reference requesting for information on the needs of the edge tools factory which can be met from the local workshops and its ability to meet the needs of the other workshops in the State. The reply received from the Expert

(copy enclosed) shows that there is nothing that other workshops can do to help him to equip his factory with any spare machinery, except some small items from the Government Electric Factory.

However, when the factory starts work, the Expert will need a number of dies and other appliances for the manufacture of which the Electric Factory is equipped. He may, therefore, be requested to give a list of his requirements in this line to the Electric Factory, to ascertain, if they can supply any of these. A number of tools, such as ball-pane hammers, sledge hammers, carpenter chisels will be available for purchase by the other workshops. But this is in the nature of purchase of finished articles and does not really come under the terms of reference in question.

Bangalore,
Dated 11th December 1939.

B. G. A. MUDALIAR,
Industrial Engineer.

Letter No. WS. 3—139, dated 24th November 1939, from the Works Manager, Mysore Railway Workshops, Mysore, to the Industrial Engineer, Bangalore.

Re Machineries in Railway Workshops.

With reference to your letter No. 1174 of 16th November 1939, addressed to our Loco. and Carr. Superintendent, Mysore State Railway, Mysore, I have the honor to inform you that the machinery now in our workshops are found inadequate to meet the demand of our present outturn, and with the greatest difficulty work is being progressed by working overtime as and when required. Additional machineries required to that extent of progressing the programmed work in shop, have been ordered and the supply is yet awaited and as such, there are no machineries superfluous now in shop, that could possibly be made use of solely for any private or other Government works.

To meet with the emergency of Government and other private parties, jobs that require welding, slight machining and grinding of parts are undertaken occasionally where it cannot be refused, much to the detriment of progress of our works in shop. Besides, for some time past, the overtime working in shop has been suspended due to some unavoidable difficulties and it would therefore be now next to impossibility to undertake jobs other than our programmed work of repairs to rolling stock and other Railway Departmental works.

M. CHELUVE URS,
Works Manager.

Letter No. G. 425, dated 21st November 1939, from the General Manager, the Mysore Implement Factory, Hassan, to the Industrial Engineer, Bangalore.

We are in receipt of your letter dated 16th November 1939 and thank you for the same.

Our idea at present is to take up the manufacture of tools and implements that are not manufactured elsewhere in the State and to equip the Factory with suitable machinery. The products of manufacture would be the following:—

(1) Mamooties of different types.
(2) Estate implements like digging forks, felling axes, pruning knives, etc.
(3) Artisan's tools like sledge hammers, chisels, etc.
(4) Cutlery.

The machinery required consist of power hammers, grinding machines, tempering furnaces and minor items like one lathe, one drilling machine, one small saw bench, etc. Most of these are available in India except power hammers of 2 cwts. and 3 cwts., about which we have just received intimation from the Secretary, Stores Purchase Committee, that a consignment as per our order placed in England would be despatched.

No. D. 239-42—I. & C. 297-39-4, DATED 13TH JULY 1940.

The undersigned had occasion to visit the Government Electric Factory and Railway Workshops where he could not find any spare machines of a satisfactory nature to suit the exact needs of this factory, excepting a few minor items in the Electric Factory, *viz.*, hand presses and one drilling machine which are now proposed to be purchased. It is hoped that most of the other machines required would be received to enable manufacture to be commenced.

The type of equipment required for the manufacture of mamooties does not exist in other Government factories and since the manufacture of these must be completed in continuously heated operations, it would be most uneconomical to conduct part of the operations in other factories even if they have some machines to carry out part of the work.

C. K. MENON,
General Manager.

No. D. 239-42—I. & C. 297-39-4, DATED 13TH JULY 1940.

STATEMENT A.

Statement showing the value of work done in each concern for different parties.

Serial Number	Name of the concern	Period of time for which figures are given	Average figs. per month	Value of work done(analysed)			Remarks
				Maintenance and stock	Government parties	Private parties	
		Rs.	Rs.	Rs.	Rs.	Rs.	
1	Government Electric Factory.	72,186 (For 3 months) (calculated)	24,062	...	...	...	The analysis is not given by the Government Electric Factory.
2	Mysore Iron and Steel Works.	2,04,545 (For 6 months)	34,091	1,17,496	86,869	180	Cost of structural work which is mostly of material, accounts for Rs. 50,102.
3	Government Central Industrial Workshop.	91,496 (For 6 months)	15,249	10,175	67,391	13,930	Among the private parties, The Mysore Sugar Company, Ltd., are the biggest customers.
4	Mysore Power and Lighting.	12,739 (For 6 months)	2,123	2,123	...	...	The Workshop does only maintenance and stock works.

STATEMENT B.

Statement showing how re-adjustments of machinery could be effected for efficient work.

Sl. No.	Name of the Concern	Transfers of machinery proposed	Additions proposed	Remarks
1	Government Electric Factory.	1. Big planing machine (Item 4 in the Machine Shop list.)	1. The transformer shell manufacturing section of the Central Industrial Workshop consisting of one Arc-welding set and tools.	1, 2, and 3. The machines of the Government Electric Factory may be sent to the Mysore Iron and Steel Works, and 4. The pillar drilling machines, to the Government Central Industrial Workshop.
		2. Horizontal boring mill (Item 6 in the Machine-shop list).	...	
		3. Big hack-saw machine, (Item 2 in the Machine-shop Stores list).	...	
		4. Pillar drilling machines (Items 25 and 4 in the Machine Shop list).	...	
		5. Cupola and Foundry equipment generally.	...	5. One of the cupolas or the foundry equipment generally to be transferred to the Government Central Industrial Workshop.
2	Government Central Industrial Workshop.	1. The transformer section: to the Government Electric Factory.	2. Pillar drilling machines, from the Government Electric Factory.	The Central Industrial Workshop transformer section may be transferred to the Government Electric Factory.
3	Mysore Iron and Steel Works.	None	*Vide* under Goverment Electric Factory.	

N.B.—(1) Surplus stock of the Government Electric Factory to be disposed of in the manner indicated under the "Government Electric Factory."

(2) The Mysore Power and Lighting Workshop and the Railway Workshops do not come into this list for reasons given in the report.

No. D. 233-42—I. & C. 297-39-4, DATED 13TH JULY 1940.

STATEMENT C.

Sl. No. and Name of the Concern	Special equipments whose use can be given for other concerns	Special nature of work turned out by these machines	Remarks
(1) Government Electric Factory	(1) Universal Grinding machine.	(1) For grinding pins, cutters, etc.	All concerns, *viz.* Central Industrial Workshop, Iron Works and the Railways can make use of these facilities when needed.
	(2) Boring machine ...	(2) Boring of cylinders for engines.	
	(3) Hobbing machine	(3) Cutting of large size gears and worms.	
	(4) Die-making section	(4) Making dies for pressing or forging.	
	(5) Presses.	(5) Pressing sheets in brass, aluminium and thin M. S. sheets.	
	(6) Instrument section.		
	(7) Electro-plating ...	(7) Electro-plating articles for fine finish in brass and steel.	
	(8) The machines such as lathes, drills, etc.	...	The other machines in the machine shop section will have not much work when machine tool manufacturing work orders are completed.
	(9) Forging section * ...	(9) Making of bolts and nuts,* rivets, dog-spikes, etc.	*Very useful section for all workshops; especially now, when the margin between the manufactured article and the raw material is big, it will work profitably.
			All concerns can get their bulk requirement of bolts and nuts and rivets. In addition, the Railways can place big orders for dog-spikes.
	Machine Shop.		
(2) Mysore Iron and Steel Works	(1) Heavy lathes ...	(1) and (2) Heavy works such as special castings for Diesel cylinders, gates for sluices, bed plates, and heavy machine parts can be cast and machined.	All workshops including Railway Workshops can get heavy works done here. If the casting and machining is done at the Iron Works it will be economical.
	(2) Boring machines ...		
	(3) Gear-cutting machine heavy type.	(3) Gear-cutting of large wheel blanks can be done economically.	
	(4) Big planing and shaping machines.		
	(5) Big hydraulic press		
	(6) Big rolling machine		
	Foundry.		
	Overhead crane and 3 cupolas of big capacity and other appliances.	(5) Press fits for heavy machines, such as pressing in axles and shafts to wheels and rollers.	
		(6) Rolling of thick plates to any diameter—very useful for circular tanks, chimneys and other jobs.	
		(7) With a little extension, the foundry can take up small castings on a bulk basis, such as spares for textile mills, etc.	
(3) Central Industrial Workshop	Self-recording annealing furnace.	For annealing all castings including cast iron castings useful for annealing plough parts of cast iron.	(1) The workshop is a composite unit containing all kinds of machines for general repair works and manufacture of simple machines. It can take up gun-metal castings especially from the Railways. There is a good amount of work for this type in the Railways which they cannot cope with.
			(2) It can take up phosphor bronze castings and machining for all concerns.
			(3) Annealing of cast iron castings can be taken up for any of the concerns.

No. D. 239-42—I. & C. 297-39-4, DATED 13TH JULY 1940.

STATEMENT C—*contd.*

Sl. No. and Name of the Concern	Special equipments whose use can be given for other concerns	Special nature of work turned out by these machines	Remarks
(4) Mysore Power and Light Workshops.			Maintenance workshop with a few machines. It is not suited for outside work. However, emergency repairs involving parts requiring machining can be taken up for the local Engineering and other Government Departments or concerns, when not engaged on their own work.
(5) Mysore State Railway Workshop.	(1) Surface grinder—a heavy and accurate machine. (2) Horizontal boring mill, a big and accurate machine.	(1) Surface grinding of large surfaces. Useful for jobs such as requiring a perfectly plane surface, in lathe beds, etc. (2) For boring cylinders and liners, etc. A very useful machine.	The workshops in Bangalore can have the use of these machines especially as jobs suitable for these machines are not common. *N.B.*—I have already mentioned under the Central Industrial Workshop about our being able to help the Railway Workshop in the casting of the brasses.
(6) *The Mysore Implement Factory.			Will be able to supply, finished articles such as hammers, carpenters' chisels and other tools.

N.B.—*(6) This factory is included under this statement as certain correspondence with this factory has been included in this report.

No. D. 239-42—I. & C. 297-39-4, DATED 17TH JULY 1940.

GOVERNMENT OF MYSORE. ELECTRICAL DEPARTMENT.

Details of information called for in letter No. 1167, dated the 15th November 1939 to the Chief Electrical Engineer to the Government of Mysore, Bangalore, from the Superintendent, and Industrial Engineer, the Central Industrial Workshop, Bangalore (*Vide* C. E. E.'s Memo No. 12724, dated 20th November 1939).

I. *List of Departments*:—
(1) Machine shop and fitting section.
(2) Smithy Section (with a small foundry).

II. *List of Machinery*:—

		Original Value	*Present Book Value*
		Rs.	
Lathe S. C. 8″ complete close base and 4½″ centre to centre (Dutt machine and Tool Works, Calcutta).	1	Not traceable	...
Lathe S. C. 7″ complete 3′ centre to centre open base (Alfred Herbert India, Ltd., Calcutta). Agents for Messrs. Jones Burton & Co., England)		1,648	...
Machine, Shearing and punching (S. Applayard & Co. Halifax, England).	1	1,145	...
Machine Drilling 30″ upright (Turner Hoars & Co., Ltd., Bombay).	1	1,195	...
Machine planing complete (Jones Burton & Co., Ltd., England).	1	3,006	...
Machine screw cutting	1	550	...
Machine, Tool Grinding (Jessop & Co., Ltd., India)	1	210	...
(Two Drilling machines under repairs at present)			
Power Driven Forge	1		

III. *Work executed in Workshop, etc.*:—

	Maint and Stock. Rs.	a.	p.	
May 1939	2,525	9	0	
June ,, ...	1,353	6	1	
July ,, ...	2,011	9	0	
August ,, ...	3,048	8	0	
September ,, ...	2,140	10	0	or Rs. 2,160 5 0
	19	11	0	
October ,, ...	1,649	9	0	
Grand Total ...	12,738	14	1	

List of works on hand during October 1939.

1	Preparing	500 straps for C. I. Boxes
2	Do	350 pairs angle iron braces 18″
3	Do	200 ,, ,, ,, ,, 24″
4	Do	300 ,, ,, ,, ,,
5	Do	10 Cycle stands
6	Do	1 set fittings for fencing
7	Do	1 set frames for fencing
8	Do	1 Doz. flasher contracts
9	Do	500 sets clamps for 41½ Lbs. rails
10	Do	500 sets clamps for 50 Lbs. rails
11	Do	18 T. W. Power meter boxes
12	Do	50 Y. Cross arms
13	Do	50 Special Goose Necks
14	Do	100 M. L. pole clamps 2nd sts.
15	Do	6 cop. tees
16	Do	5 sets D. C. A., etc.
17	Do	6 sets P. G. clamps, etc.
18	Do	12 sets P. G. clamps, etc.
19	Do	500 2-pin cross arms
20	Do	30 pairs hooks for 7·5 K. V. A. transformers
21	Do	30 pairs hooks for 10 K. V. A. transformers
22	Do	500 side clamp 50 Lbs Rails
23	Do	500 sets clamps 50 Lbs. Rails
24	Do	1 D. S. gate
25	Do	6 sets Hooks for 1.5 K. V. A. Transformers
26	Do	50 4-pin cross arms D. L.
27	Tinning	112 lbs No. 6 B & S. bare Cop. wire
28	Preparing	50 4-pins cross arms
29	Do	150 Lbs. solder
30	Do	200 distance pieces No. 2-pole
31	Do	1500 H. H. compound strip holders
32	Do	6 sets copper tees
33	Do	9 sets cycle stands
34	Do	1 D. S. gate, etc.

No. D. 239-42—I. & C. 297-39-4, DATED 13TH JULY 1940.

List of works on hand in November 1939.

1	Preparing	500 straps for C. I. Boxes
2	Do	350 pairs angle iron braces 18"
3	Do	200 pairs angle iron braces 24"
4	Do	300 pairs angle iron braces 24"
5	Do	500 sets clamps 41¼ lbs. rails
6	Do	30 pairs Hooks for 7·5 K. V. A. transformers
7	Do	30 pairs Hooks for 10 K. V. A. transformers
8	Do	500 side clamps for 56 lbs. rails
9	Do	1 D. S. gate
10	Tinning	112 lbs. No. 6, B & S copper wire
11	Preparing	1,500 H. H. compound strip holder
12	Do	6 sets copper tees
13	Do	1 D. S. gate
14	Do	2 sets cycle stands
15	Do	12 T. W. 4-way boxes
16	Do	6 T. W. 6-way boxes
17	Do	3 T. W. 8-way boxes
18	Do	100 Foundation bolts
19	Do	100 straps iron for C. I. boxes
20	Do	100 S. T. supports
21	Do	100 Alluminium P. G. clamps
22	Do	300 M. L. pole clamps
23	Do	25 G. round pipes 2"
24	Tinning	1,000' copper tape 1"×1/8"
25	Do	250' copper tape 1"×1/8"
26	Preparing	2 D. S. Gates
27	Do	75 lbs. Solder
28	Do	24 T. W. Boxes 6-way
29	Do	24 T. W. Boxes 4-way
30	Do	1 catch for H. T. Isolator
31	Tinning	3 copper plates, etc.
32	Preparing	100 Lbs. solder etc.

Remarks:—

The workshop is meant mostly for purposes of renewals and repairs. Owing to the several electrification schemes on hand now, there are a lot of works to be carried out. Besides the above, works of an urgent nature such as repairs to plant and those pertaining to the Palace have to be carried out very expeditiously so much so that works for other departments cannot be undertaken.

No. D. 239-42—I & C 297-39-4, DATED 13TH JULY 1940.

GOVERNMENT ELECTRIC FACTORY.

CARPENTRY SECTION.

No.	Name with General Specification	Condition of Machine	In use or not	Whether fit for precision work	Whether tight work, or occasional work or light work	Value	Remarks
1	Drilling machine 'Tauco' 0·6 BHP. Brown Boveri Motor	Good	In use	Fit	Light	...	1 to 8 cannot be spared
2	Drilling machine, walker, Turner Co with G. L. Motor	,,	,,	,,	,,	...	
3	Fretsaw Machine 'Delta' with 1–2H. P. Motor	,,	,,	,,	,,	...	
4	Brandsaw Machine 'Delta' with motor ...	,,	,,	,,	,,	...	
5	Wood Turning Lathes, two in no. with motors	,,	,,	,,	Tight	...	
6	Circular Saw Machine made at G.E.F. with motor	,,	,,	,,	Light	..	
7	Planing Machine 6" capacity with 'Delta' motor	,,	,,	,,	,,	...	
8	Circular Saw Machine 'Delta' with motor ..	,,	,,	,,	,,	...	
9	Electric Motor Crompton 1—3 H. P. (removed from Grinding machine) ...	,,				...	

FORGING SECTION.

No.	Specification	Condition	In use or not	If used, is it fit for precision work	Tight work, or occasional or light works	Value	Remarks
1	Greenwood and Batley Big Forging machine	Not satisfactory	In use ...	Not for precision work ...	Tight work ...	...	cannot be spared
2	Greenwood and Batley Small Forging machine	,,	,,	,,	,,	...	,,
3	Threading Machine	Fair ...	,,	,,	,,	...	...
4	Drilling Machine	Requires repair	Not in use...	,,	...	...	can be spared
5	Nuts Taping Machine	Fair ...	,,	,,	...	...	cannot be spared
6	Bolts Screwing Machine	Bad ...	In use ...	,,	Light work ...	...	,,
7	Big Friction Press	Good ...	,,	Yes ...	Very light work	..	,,
8	Peter Piltington Patent Pneumated Power Hammer	Fair ...	,,	Useful for rough work ...	Tight work	...	,,
9	Punching and Shearing Machine (similar to one in C.I.W.)	Good ...	Not in use...	Can be used for structural work	Not used ...	...	can be spared
10	Two Pipe Threading Machines... ..	Requires heavy repair ...	,,	Not fit for precision work ...	,,	...*	,,

*Value will be furnished at the time of disposal.

STORES.

No.	Name of the Machine with Specification	Condition	Whether useful for work	Whether having light, average or tight work	Value	Remarks
1	Rapidor Sawing Machine—12" size ...	Good	Yes	Average work	...	Cannot be spared
2	Rapidor Sawing Machine—20" size ...	,,	,,	No work	...	Can be spared
3	Rapidor Sawing Japan—8" size	,,	,,	Tight work	...	Cannot be spared
4	Leg Working Lathes	Not good	No	No work	...	Can be spared
5	Hand Working Cutter (circular saw) ...	Old	,,	No work	...	,,
6	Avery's Weighing Machine—1 ton cap. ...	Good	Yes	Average work	...	Cannot be spared
7	Avery's Weighing Machine—4cwts ...	,,	,,	Tight work	...	,,
8	Screwing Machine Singer	,,	,,	No work	...	Can be spared
9	Ganz Induction Motor, 0.5 H. P. 1440 r. p. m. 220V. 2. 5A. 25 Cycles	,,	,,	...	...	Cannot be spared
10	Induction Motor, B.T.H.1.O. H.P. 3 Ph. 25n. 670 r.p.m. 3. 2A. 220V.	,,	,,	...	...	,,
11	D.C. Motor 0.75 H.P. 220 V. 3·5A. Shunt ...	,,	,,	...	...	,,
12	Induction Motor—Ganz 1 H.P. 220V. 25n. ...	,,	,,	...	...	,,
13	Old Distillary Scrap-nearly 10 tons consisting of brass, gun metal and copper tubes, plates bendes, etc.	...	...	...	...*	For Sale

*Value of machines that can be spared will be intimated at the time of sale.

K. PARTHASARATHY,
General Manager,
Government Electrical Factory.

Bangalore,
29—11—1939.

No. D. 239-42—I & C 297-39-4, DATED 13TH JULY 1940.

GOVERNMENT ELECTRIC FACTORY.

REPLY TO MEMO No. 9.

MACHINE TOOLS.

No.	Machine with General Specification	Condition of machine	In use or not	If used, is it fit for precision work	If used, engaged fully with tight work occasional or light work	Value of machine Rs. a. p.	Remarks
1	*Shaping Machine No. 1*:—"Turner Hoare and Co., Bombay with 3HP. Motor, Stroke 18", working bed 16"×12", movement of the tool holder 6" vertically working bed movement 12" vertically and 16" horizontally.	In good working condition.	In use	Yes	Tight work	...	Unless replaced with new machinery none of them could be spared.
2	*Shaping Machine No. 2*:—"Toopex" Swedish make with 3 H.P. motor-stroke length 24", working bed 23"×13" Tool Holder slide 6" vertically, bed movement 12" vertically 16" horizontally.	In good working condition.	Do	Do	Do	...	
3	*Shaping Machine No. 3*:—"Paris" with 3 H.P. motor-Stroke length 18", working bed 17½×11½". Tool Holder Slides 4", vertically, working bed movement 20" vertically and 12" horizontally.	Secondhand requires slight repairs.	Do	Rough work	Do	...	
4	*Big Planing Machine*:—"Miller" with 15 H.P. motor and starter. Stroke length 13', working bed 16½ft.×3½ft. double tool holders, movement 4 ft. horizontal and 3½ ft. vertical.	Secondhand working satisfactorily.	Do	Moderate work.	Do	...	
5	*Slotting Machine*:—with 2 H.P. motor, Ram stroke 5", horizontal movement of bed 16", transverse movement 16" and diameter 20".	Secondhand working satisfactorily.	Do	Do	Do	...	
6	*Boring Machine*:—with 15 H.P. Motor and Starter. "Geo Richards and Co., Ltd.," Max. diameter of facing 24", with special tools, the facing could be done up to 42", vertical, transverse of sliding head 18", size of the main table length 5 ft, breadth 3 ft., size of the detached turn table 3'×3', longitudinal transverse of table 43", transverse motion of table 4'.	Secondhand light repairs effected working satisfactorily.	Do	Do	Do	...	
7	*Gear Hobbing Machine*:—with 3 H.P. motor working bed diameter 2 ft., cutter slide movement 12" vertically, transverse movement of the working bed 21" and longitudinal movement of the cutter slide 4".	Secondhand working satisfactorily.	Do	Do	Do	...	
8	*Horizontal Milling Machine*:—with 3 H.P. motor, working bed 43"×12", transverse movement of the bed 7½", horizontal movement of the bed 36", and vertical movement of the bed 18".	Secondhand working satisfactorily.	Do	Do	Do	...	
9	*Vertical Milling Machine*:—with 3 H.P. motor working bed 49"×12", transverse movement of the working bed 11", horizontal movement of the working bed 32", vertical movement of the working bed 14", and vertical movement of the cutter slide 4".	Secondhand used only for facing, boring and drilling.	Do	Do	Do	...	
10	*Radial Drilling Machine*.—With 3 H. P. Motor. Working bed 20" × 20", Vertical movement of the spindle 10" and horizontal movement of the spindle slide 2 ft.	Purchased new working in good condition.	In use	Accurate work.	Tight work	...	...
11	*Universal Grinding Machine*.—With 5 H. P. Motor, working bed 61" × 8", Horizontal movement 54". Transverse grinding stone slide moving 12".	Secondhand, working satisfactorily.	Do	Accurate.	Occasion	...	...
12	*Lathe No. 1 with 2 H. P. Motor*.—Working bed 42" × 10½", Swing radius 8", swing of the gap 13" and length between centres 21".	Most inaccurate. No change wheels are available. New bearings are required.	Do	Rough work.	Tight work	...	...
13	*Lathe No. 2 with 3 H. P. Motor*.—Working bed 95" × 9½". Swing radius 7½" and between centres 77".	Secondhand. Requires slight alteration for accurate work.	Do	Do	Do	...	...
14	*Lathe No. 3 with 3 H. P. Motor*.—Working bed 56" × 14", swing 9" radius and between centres 36".	Secondhand working satisfactorily.	Do	Moderate and plain work no facility for change wheels. No tail stock.	Do	...	...
15	*Lathe No. 4 with 5 H. P. Motor*.—Working bed 72" × 12" swing radius, 8", between centres 58" (Metric system).	Do	Do	Satisfactory	Do	...	...
16	*Lathe No. 5 with 2 H. P. Motor*.—Working bed 84" × 15", swing radius 8", and between centres 61".	Do	Do	Medium	Do	..	...
17	*Lathe No. 6 with 2 H. P. Motor*.—Working bed 72" × 15", swing 8" radius and between centres 64".	Do	Do	Do	Do	...	...
18	*Lathe No. 7 with 2 H. P. Motor*.—Working bed 83" × 15", swing 8" radius and between centres 63".	Secondhand No change wheels.	Do	Rough work	Do	...	...
19	*Lathe No. 8 with 2 H. P. Motor*.—Working bed 42" × 12", swing radius 7" and between centres 28".	Purchased new in good condition.	Do	Light tiny work inaccurate.	Do	...	...

No. D. 239-42—I. & C. 297-39-4, DATED 13TH JULY 1940.

Reply to Memo No. 9.—(*concld.*)

No.	Machine with Genera Specification	Condition of machine	In use or not	If used, is it fit for precision work	If used, engaged fully with tight work, occasional or light work	Value of machine Rs. a. p.	Remarks
20	*Lathe No. 9 with 2 H. P. Motor.*—Working bed 72′ × 15″, swing radius 8″ and between centres 54″.	Secondhand working satisfactorily.	In use	Medium.	Tight work	...	...
21	*Lathe No. 10 with 5 H. P. Motor.*—With geared head stock.—Working bed 96″ × 20″, swing 11″ radius and between centres 70″.	Secondhand, in good condition.	Do	Satisfactory.	Do	...	...
22	*Lathe No. 11 with 3 H. P. Motor.*—Working bed 57″ × 12″, swing 8½″ radius and between centres 36″.	In good condition.	Do	For accurate work.	Do	...	...
23	*Lathe No. 12 with 3 H. P. Motor.*—Working bed 96″ × 15½″, swing 10″ radius and between centres 74″.	Secondhand, in good condition.	Do	Do	Do	...	...
24	*Small Planing Machine, with 3 H. P. Motor.*—Stroke length 60″. Working bed 72″ × 21″, Horizontal movement of the tool Holder 21″ and vertical movement 24″.	Secondhand, used for rough work.	Do	Inaccurate.	Do	...	...
25	*Pillar Drilling Machine with 2 H. P. Motor.*—Vertical movement of the spindle 7″ radius of the working bed 8 3/16″, vertical movement of bed 23″ and the distance from the tangent of the Pillar to the Centre of the bed 10″.	Secondhand, only for very rough work.	In use for rough work.	No	Occasional work.	...	...
26	*Table Vices.*—						
	4″ Jaws ... ... Ps. 6	Working satisfactorily.	In use.	No	Tight work	...	...
	5 ″ 1						
	7 ″ 1						
27	*Marking Table.*—(Made in Germany) Size 12′ × 6′ × 2½′.	Purchased new.	No.	O. K.	...	...	...
28	*Marking Table.*—(G. E. F. make) size 8½′ × 8½′ × 6″, mounted on 3 pillars, height 8½′.	Working satisfactorily.	In use	...	Tight work	...	...
29	*Cupola Capacity one ton.*—With centrifugal fan type blower, run by 7 H. P. Motor.	Secondhand, working satisfactorily.	Do	...	Do	...	...
30	*Two Cupolas under Erection.*—Capacity 1½ tons each, without blower and Motor.	...	...	...	...	...	...

GOVERNMENT ELECTRIC FACTORY.

Statement showing the work done in each section, machinery and equipment and the average monthly production for the last three months.

Sl. No.	Name of the Section	Value of Machinery and equipment, at the end of June 1939	Average Monthly production for the last three months	Nature of work done
		Rs.	Rs.	
1	Machine Department ...	1,02,041	4,862	Manufacture of bakelite presses, experimental drilling machines, Capstan Lathes and minor repair works of the other sections of the Factory.
2	Bakelite	68,027	3,600	Manufacture of novelty articles like Soap Boxes, Shaving Stick Containers, Electrical Goods like Ceiling Roses. Manufacture of cut-outs is still on an experimental basis.
3	Forging	23,739	1,000	Manufacture of bolts and nuts for The Mysore Iron and Steel Works, Mysore State Railway, and on a small scale to meet the needs of Local Merchants.
4	Metal Pressing ...	21,958	700	Manufacture of Hasps and Staples. Trunk Handles, Padlocks, etc.
5	Village Industries ...	14,719	500	Manufacture of Taklis, Spindles, other charka parts and Laboratory Equipment.
6	Transformers ...	79,225	12,000	Manufacture of Transformers both Single and Three Phase for the Electrical Department and other outside customers.
7	Tool Making (or Dies Making).	45,433	1,300	Manufacture of dies to Bakelite, Forging and Metal Pressing Sections.
8	Scientific Instruments ...	700	400	Manufacture of Survey and Mathematical Instruments for Public Works Department and other customers.
9	Water Meters ...	17,842	200	Experimental manufacture of Water Meters for the Water Supply Department and repairs.
		3,73,184	24,062	

No. D. 239-42—I. & C. 297-39-4, DATED 13TH JULY 1940.

Value of bills sent for the work done at the Government C. I. Workshop, Bangalore, from 1st May 1939 to 31st October 1939 (both days inclusive) for the different Government Departments.

Serial No.	Names of parties	Details of work done	Value		
			Rs.	a.	p.
1	Government Electric Factory, Bangalore.	M. S. transformer tanks of sizes and general repair work including welding.	13,914	11	0
			254	9	3
2	The Chief Electrical Engineer.	M. S. trusses for Shimsha station ...	13,988	15	0
		Lauvres for the above ...	3,712	0	0
		Mysore Type C. I. Lamp Posts ...	1,220	0	0
		C. I. 4-way lamp clusters	259	14	2
		C. I. Public Fountains ...	420	0	0
		C. I. Dwarf Lamp Posts	65	15	6
		Aluminium clamps	60	0	6
		M. S. Transmission line structures ...	6,245	0	0
		General repair works	180	2	5
3	The Mysore Sugar Co., Ltd.	M. S. Plate bends, gear wheel, etc. ...	354	1	7
		M. S. Buffer hooks	1,094	5	0
		G. M. Big bearings, bushes, and special castings.	4,944	0	2
		C. I. Tees, bends, pipes and special castings ...	3,309	9	7
		General repair work	135	0	0
4	The Assistant Engineer, Well-boring Section, Bangalore.	General repair work, supplying spare parts for drills, such as drill rods, couplings, rod collars, bearings, pump parts and plugs.	2,510	14	10
5	The Superintendent, Power and Lighting, Bangalore.	M. S. Cross arms of different sizes, M. S. brace straps, V cross arms, clamps, hooks, etc.	5,403	15	1
		M. S. Clamps for poles, aluminium groove clamps, pole butts, brace straps, guy rods.	2,071	13	0
		General repairs, solders, teak-wood boxes, suspension fittings, etc.	4,551	7	0
6	The Director of Industries and Commerce in Mysore.	Experimental works, exhibition, pumps, repair work, pug mill repair work and general repairs.	2,805	10	2
7	Industrial Engineer ...	Press and General repairs	97	8	7
8	The Superintendent of Industries, Bangalore.	Making clamps Packing and general repairs ...	28	9	2
9	The Government Silk Weaving Factory, Mysore.	Loom parts, consisting rocking shafts, bearings, etc., and improved type of silk reeling charkas.	884	15	0
10	The Superintendent, Industrial School.	G. M. Bearings	64	4	8
11	The Executive Engineer, Irwin Canal Division, Mandya.	M. S. road-roller frames, small M. S. shutters, "Z" clamps, teak-wood shutters and M. S. locking studs.	1,142	13	5
12	The Executive Engineer, Shimsha Project Division.	M. S. Oil tanks, bolts and nuts ...	1,609	12	1
13	The Executive Engineer, Buildings Division.	M. S. Railings	335	10	0
14	The Executive Engineer, Bangalore Division.	Repairs to steam road-rollers ...	122	7	7
15	The Executive Engineer, Mysore Division.	Repairs to Crossley Engine pump sets ...	433	1	4
16	The Executive Engineer, Jog Falls Division.	Well Dippers	3	4	0
17	The Assistant Engineer, No. 3 Sub-Division, Channapatna.	Repairs to steam road-roller ...	4	6	6
18	The Executive Engineer, Water Supply Division.	C. I. water meter boxes, G. M. bearings and general repairs. ...	650	9	0
19	The Executive Engineer, Lower Channal Division.	Teakwood shutters	133	12	8

No. D. 239-42—I. & C. 297-39-4, DATED 13TH JULY 1940.

Value of bills sent for the work done at the Government C. I. Workshop, Bangalore, from 1st May 1939 to 31st October 1939 (both days inclusive) for the different Government Departments—(*contd*).

Serial No.	Names of parties	Details of work done	Value		
			Rs.	a.	p.
20	The Assistant Engineer, No. 1. Sub-Division, Bangalore.	Repairs to steam road-rollers, etc. ...	813	4	7
21	The Sanitary Engineer.	Pump parts, teakwood shutters, waste-not-cocks and general repairs.	550	1	2
22	The Superintendent, Civil Veterinary Department, Bangalore.	Horse shoes to Veterinary hospitals ...	189	8	9
23	The Town Municipalities.	Pump and general repairs	323	11	5
24	Private parties ...	Making one wire-drawing machine and attending to general repairs.	1,646	3	9
25	The Mysore Vegetable Oil Products, Ltd.	M. S. stagings, C. I. dies and general repairs.	1,807	15	1
26	Tools and Plant—MM.	C. I. Moulds and repairs to machinery ...	582	8	0
27	The Mysore Tobacco Co., Ltd.	C. I. Fire bars	406	15	0
28	The Government Porcelain Factory.	Special bolts and nuts and general repairs ...	139	10	0
29	The Superintendent, Bureau of Epidemeology.	Anti-malarial spraying apparatus ...	204	1	11
30	The Government Printing Press, Bangalore.	General repairs	110	7	5
31	Mysore and British Military Department.	C. I. castings, mule shoes and general repairs.	220	14	6
32	The Superintendent, Hesserghatta Grass Farm.	General repairs, grinding chaff cutters, and repairs to stump puller machine.	105	7	0
33	The Palace Department, Mysore.	General repairs and repairs to motor cars ...	539	0	8
34	Chamarajendra Water Works.	General repairs and supply of small tools ...	172	2	3
35	The Geological Department.	Repairs to Calyx drill parts and supply of new parts.	319	5	10
36	The Mysore Paper Mills, Ltd.	Supply of rag baling presses ...	232	1	5
37	The Superintendent, Medical Stores.	Anti-malarial spraying apparatus ...	233	0	4
38	Sandalwood Oil Factory.	M. S. tank	130	0	0
39	The Government Soap Factory.	M. S. connecting rods, welding shaft and general repairs to steam coil.	63	15	3
40	Chairman, City Improvement Trust Board, Mysore.	C. I. steps and gratings	81	4	0
41	The Government Industrial and Testing Laboratory.	C. I. gratings	24	0	0
42	The Badanaval Spinning Centre.	Pump parts	28	1	5
43	The Permanent Way Inspector, Mysore Railways.	Welding broken lamp parts	13	2	0
44	The Private Secretary to the Dewan.	Repairs to Government car	26	3	2
45	Other Government Departments.	General repairs	26	7	6
46	Stock ...	Verity shares	351	10	0
		Mysore ploughs	1,733	15	9
		Mysore plough beams	78	0	0
		K. M. plough beams	6	5	8
		Eureka ploughs	256	4	0
		Cultivators	480	14	2
		C. I. spanners for ploughs	37	5	10
		Meston plough beams	53	0	0

No. D. 239-42—I. & C. 297-39-4, DATED 13TH JULY 1940.

Value of bills sent for the work done at the Government C. I. Workshop, Bangalore, from 1st May 1939 to 31st October 1939 (both days inclusive) for the different Government Departments—(*concld*).

Serial No.	Names of parties	Details of work done	Value		
			Rs.	a.	p.
	Stock—(*concld*).				
		Meston handles	11	6	0
		Do plough shares	28	2	0
		K. M. chilled shares	171	5	6
		Mysore plough bodies, C. I.	370	1	6
		C. I. foot valves for pumps	78	12	0
		Horse shoes for Military Department ...	2,714	0	0
		C. I. waste-not-cocks	900	0	0
		Sanitary fountains	245	6	3
		Bolts and nuts for ploughs	38	0	0
		Malarial spraying bellows	64	0	0
		C. I. maund weights	180	0	0
		C. I. mould boxes for foundry use ...	189	1	2
		Electrical Transformer tanks ...	1,252	0	0
		Angle irons and pipes for pumps ...	161	6	11
		Teakwood pattern for lamp post ...	192	10	3
		Grand Total ...	91,496	5	8

No. D. 239-42—I. & C. 267-39-4, dated 13th July 1940.

MECHANICAL DEPARTMENT.

The works executed are :—

PLANT.

1. Body Patterns.
2. Socket Patterns.
3. Core Bars.
4. Core Plates.

(of different sizes for Pipe Foundry.)

5. Pump parts such as Piston Rods, connecting rods, etc.
6. Steel pinions and toothed wheels up to 36" dia.
7. Cast Iron toothed wheels and pinions.
8. Brass Bearings.
9. Machinning Cast Iron flanged pipes of different diameters up to 3' dia.
10. Buggy Wheels (Cast Iron).
11. Tramway Hopper and Truck Wheels.
12. Rolling Mills Stands, etc.
13. Seel cropping shear blades.
14. Copper condensers.
15. Axel Boxes.
16. Gas Producer pipes out of M. H. Plates.
17. C. I. Moulding Boxes.
18. Miscellaneous castings and spare parts.

SALES.

1. Cast Iron specials, such as bends, tees, tail pieces, etc.
2. C. I. Lamp Posts, C. I. Pillars, C. I. Cylindar liners, Road roller rings up to 5' dia.
   Road and Meter boxes of different sizes.
   Surface Boxes, Blowing Engine Cylinders, Piston Heads, (Machinning and fitting).
3. C. I. and Steel Gates.
4. C. I. Shutters with lifting arrangements (machinning and fitting).
5. Krishnaraj Sagar gates C. I. (machinning and fitting).
6. C. I. Yokes for Electric Motors (machinning and fitting).
7. C. I. Transformer of different sizes (fitting).
8. C. I. fountains (machinning and fitting).
9. Water Tap Fountains (machinning and fitting).
10. Steel trusses and columns.
11. Electric Poles, fabrications.
12. Cluster lamp brackets (machinning and fitting).
13. C. I. Railings and ventilators (fitting).
14. C. I. Road Signs (fitting).
15. Steel Cross Arms and Braces for C. P. S. (fitting).
16. Expansion joint for water supply Department (machinning and fitting).
17. Miscellaneous Works.

MACHINE SHOP EQUIPMENT AS ON 21ST NOVEMBER 1939.

No.	Type of Machine	Manufacturers	Brief Description	Price	Remarks
				Rs.	
1	Lathe ..	Denham, England ..	Distance between centres 91″ Bed 105″ long. Medium work. Motor H. P. 5.	..	For medium work.
2	Lathe, (Tyre boxing)	....	Bed 34″ long, swing without saddle 27″. Motor H.P. 10.	500	Bought second hand from S.I.R., Negapatam. Useful for rough work.
3	Shaper ..	The Rakelley Co., Xenia, O.U.S.A.	Stroke 0″ to 20″. Length 16″ Motor H.P. 10.	1,600	Purchased second hand. Light work.
4	Wheel turning lathe.	D. New & Co., Makers, Nottingham.	Swing of the saddle 28″. Bed 123″ long. Motor H.P. 10.	700	Purchased second hand, from S.I.R., Negapatam useful for rough work. Very slow speed.
5	Lathe ..	Clarks M/c Tool and Co., Ablin Works, England.	Length of Bed 54″. Distance between centres 44″. Motor H.P. 1.	1,200	Small Lathe.
6	Lathe ..	Do ..	Length of Bed 138″. Swing on saddle 27″. Motor H.P. 5.	6,000	Medium sized Lathe. One of the good Lathes in service.
7	Lathe ..	Monarch Machine Co., U. S. A.	Length of Bed 55″. Swing on saddle 11″ ..	4,000	Do
8	Lathe ..	Dean Smith Grace Co., England.	Length of Bed 59″. Swing on saddle 10½″. Motor H.P. 5.	1,750	Purchased second hand from Bombay.
9	Lathe ..	The Hendey m/c Company, Torrington, U.S.A.	Length of Bed 92″. Swing on saddle 9″. Motor H.P. 5.	2,500	Purchased second hand. Medium size.
10	Lathe ..	K. Rause, Co., Berlin ..	Length of Bed 54″. Distance between centres 40″. Motor H.P. 1·2.	1,000	Small Lathe for light articles.
11	Lathe ..	The Birmingham Foundry and Co., U.S.A.	Length of Bed 108″. Swing on saddle 15″. Motor H.P. 7·5.	3,500	Purchased second hand. Medium size.
12	Lathe ..	John Lang and Sons, Ltd., Johnstove.	Length of Bed 66″. Swing on saddle 39″. Motor H.P. 10.	7,000	Useful for heavy work. Purchased second hand.
13	Lathe ..	The Rahu Larmon, Co., Cincinneti, U.S.A.	Length of Bed 48″. Swing on saddle 9″. Motor H.P. 10.	..	Ordinary works.
14	Slotter ..	The Dean Smith and Grace Tool Makers, Keighley, Yorks, England	Maximum stroke 10″. Table dia. 41″. Motor H.P. 10.	..	Very old make.
15	Vertical boring machine.	Webster and Bement Co., Ltd., Coventry, England.	Stroke 24″. Cross rail 26″ and 18″. Swing 25″. Motor H.P. 10.	6,000	Purchased second hand from Bombay. Has two tables.
16	Slotter ..	....	Stroke 10″. Table dia. 31′. Motor H.P. 10	1,750	Purchased second hand from Bombay.
17	Screw cutting Machine.	Williams Tools Company, Eriepa, U.S.A.	Motor H.P. 10. Max. capacity 4 Minimum ½″.	..	Practically unserviceable.
18	Shaper ..	Hercules m/c tools, England.	Stroke 14″. Min. 2″. Motor H.P. 10 ..	700	Very small works.
19	Air compressor.	Ingersoll Rand Co., New York.	Air — 10 × 8	..	Used for supplying air at 80 lbs. for smithy and general work.
20	Power Hacksaw machine.	Edward G. Herbert, Ltd., Manchester, England.	Stroke 6″. Height 8″. Motor H.P. 10. ..	..	Ordinary works.
21	Shaper ..	Niles Bement Works, Philadelphia.	Stroke Max. 22″. Tables 22″ × 1′—9″. Motor H.P. 10.	..	Ordinary works.
22	H. Boring Machine.	D. and J. Tullis Ltd., Clyde Bank.	Length of Bed 5′. Width 3′. Motor H.P. 5.	5,000	Purchased second hand from Bombay.
23	Do ..	W. M. Muir and Co., Ltd., Manchester, England.	Length of Bed 63″. Distance between the spindle centre and cross table 40″. Motor H.P. 5.	4,000	Do Calcutta.
24	Hand press	Atlas Compound Press Co., Kalazoo Mier, U. S. A.	....	750	Small press to fit bushes and pins. Purchased second hand.
25	Driller ..	Corona, England ..	Capacity 1/32″ to 1¼″. Table dia. 18″. Motor H.P. 5.	..	Small tool.
26	Driller ..	Fair Banks, Co., U.S.A.	Capacity 1/32″ to 1¼″. Table dia. 18″. Motor H.P. 5.	..	Do
27	Gear shaper	The Hellows Gear Shaper Co., Spring Field Vermond, U.S.A.	Stroke 5″. Table dia. 36″. Motor H.P. 5	5,000	Purchased second hand. Capable of handling outside orders.
28	Miller ..	Robson Universal Miller 2 A.	Length of bed travel 18″ crosswise. Length of Bed travel lengthwise 24″. Motor H.P. 5.	3,000	Purchased second hand. Can handle some more outside orders.
29	Miller ..	Le Blond No. 2. Heavy duty Miller, U.S.A.	Length of bed travel 18″. Motor H.P. 5. ..	..	Can take up some outside work in addition.
30	Radial Driller.	Sheppard Hill and Co., Leeds.	Capacity Max. 3″. Min. ¼″. Motor H.P. 5.	..	Old type. Useful for very rough work.
31	Arc welding set.	G. E. Co., Schenectady	Capacity 60 v. and 400 amps. A.C. Motor H.P. 60.	..	Old type.
32	Planer ..	The Liberty Tool Machine Co., Hamilton, O. U.S.A.	Length of Bed 10′—9″. Width 20″. Motor H.P. 5.	..	Small tool.
33	Lathe ..	Wardhaggas and Smith, Keighley.	Twin centres. Heavy duty engine lathe. Motor H.P. 10.	10,000	Heavy lathe.

MACHINE SHOP EQUIPMENT AS ON 21ST NOVEMBER 1939—*concld.*

No.	Type of Machine	Manufacturers	Brief Description	Price	Remarks
				Rs.	
34	Lathe (Heavy duty).	Betts, Bridgeford, Lochester, N. Y. U.S.A.	Length of Bed. 16′—6″. Distance between centres 166″. Motor H.P. 25	..	Heavy lathe.
35	Lathe. (Heavy duty).	Smith Coventry and Ltd.. Manchester. England.	Length of Bed 30′. Distance between centres 23′—6″. Motor H.P. 10.	7,000	Medium heavy lathe.
36	Lathe ..	Bangalore Industrial Work Shop.	Length of Bed 42″. Swing on saddle 13″. Motor H.P. 10.	..	Used for miscellaneous works.
37	Planer ..	White Machine Tool Co., Ltd., Halifax, England.	Length of Bed 17′—6″. Width 3′—10″. Motor H.P. 25.	22,000	Useful for heavy work. Can take heavy machining work with this machine tool.
38	Radial drill	Beruck and Comens, Anvers	Capacity 1/32″ to 1 1/4″ and 3′. Motor H.P. 7.5.	..	Old machine. Useful for very rough work.
39	Punching and shearing machine.	Henry Pels., Germany ..	Capacity 0 = 2 $\frac{1}{8}$″ Max. Sq. = 1 $\frac{7}{8}$″ Max. Angle = 4$\frac{1}{2}$″ × 4$\frac{1}{2}$″ × $\frac{1}{2}$″ Max. Motor H.P. 6.	6,000	..
40	Plate Bending machine.	Niles Bement Pond Co., Hamilton, Ohio.	Capacity Tons on 9 in ram 200 tons. Motor H.P. 3.	..	Pressing wheels, shafts and pinions. Not completely engaged.
41	Plate Bending machine.	Graig and Donald Ltd., Johnston, Scotland.	Capacity 9′ × $\frac{5}{8}$″ plate. Motor H.P. 15 ..	6,000	Can take up some more work.
42	Arc welding set (portable model)	Metropoliton Vickers, England.	Capacity 25-30 volts. 300 amps. Motor H.P. 16 to 19.	1,800	Used for structural works.
43	Driller ..	....	Capacity 1/32″ to 1$\frac{1}{4}$″. Motor H.P. 3 ..	..	Small tool. Not quite accurate.
44	Punching and Shearing machine.	Original Peddingans, Germany.	Capacity 0 = 2″ Max. Sq. = 1$\frac{3}{4}$″ Max. Angle = 5″ × 5″ × $\frac{1}{2}$″ Max. Motor H.P. 7·5.	6,500	Used for general work.
45	Power Hammer	Pilkington ..	Stroke—8″. Capacity 3 cwts. Motor H.P. 25.	3,000	Smithy shop.
46	Steam Hammer.	Bement Co., New York ..	Stroke 24″. Capacity $\frac{1}{2}$ ton.	..	Do
47	Overhead crane.	Herbert Morris, Ltd., London, England.	Capacity—5 tons. Motor H.P. 5 ..	5,000 plus 5,000	For general lifting work in the shop.

LIST OF MACHINERY IN THE GOVERNMENT CENTRAL INDUSTRIAL WORKSHOP, BANGALORE.

Sl. No.	No. on the Machine	Description of the machinery	Maker	Condition	Fit for precision work or not	Book value	Re-value
						Rs. a. p.	Rs. a. p.
1	M. 1	12″ centre lathe, back-geared, sliding, surfacing and screw cutting Lathe on 20 ft. bed admitting between centres 15½ ft. Swing 24″ diameter over bed and 18″ over saddle. Head stock has four-speed cone for 3″ belt, tail-stock sets over for taper turning with catch plate, full plate and change wheels. Swings 3½′ dia. in gap 12″ wide.	F. Pratt & Co., Ltd., Halifax, England.	Fair	No	2,380 0 0	1,000 0 0
2	M. 2	10″ centre lathe, back-geared, sliding, surfacing and screw cutting lathe on 24½′., bed admitting between centres 20′. Swings 20″ dia. over bed 15″ and over saddle. Swings 3′ dia. in gap 12″ wide. Head-stock has four-speed cone for 3″ belt with catch plate, face plate and change wheels.	Not stated on the machine.	Fair	No	2,130 0 0	900 0 0
3	M. 3	10½″ centre lathe back-geared, sliding, surfacing and screw cutting lathe on 12′ bed admitting between centres 7½′ swings 21″ dia. over bed and 16″ over saddle. Swings 3′ dia. in gap 12″ wide sliding and surfacing feeds are through back shaft with 3 changes. Head stock has 4 speed cone pulley for 3″ belt. Tail stock sets over for taper turning with catch plate, face plate and change wheels.	Do	Fair	No	1,720 0 0	800 0 0
4	M. 14	8½″ centre lathe back-geared, hollow spindle sliding, surfacing and screw cutting lathe on 8′ bed admitting between centres 4′. Swings 2½′ dia. 9″ wide in gap, 17″ over bed and 12″ over saddle and pass 2″ through hollow spindle. Head stock has 4 speed cone for 3″ belt. Tail stock sets over for taper turning complete with catch plate, face plate and change wheels.	Do	Fair	No	2,030 0 0	500 0 0
5	Old No.7	9½″ centre lathe back-geared sliding, surfacing and screw cutting lathe on 8′ bed admitting between centres 4′. Swings 3′ dia. by 8″ wide in gap 19″ dia. over bed and 13″ dia. over saddle. Head stock has four speed cone for 2″ belt. Tail-stock sets over for taper turning. Complete with catch plate, face plate and change wheels.	Do	Fair	No	..	550 0 0
6	M. 7	6″ centre lathe back-geared sliding, surfacing and screw cutting hollow spindle lathe on 6′ bed admitting between centres 2½′. Swings 2′ dia. and 6″ wide in the gap, 12″ dia. on bed and 8½″ dia. on saddle. Hollow spindle for ¾″ dia. Head stock has 3 speed cone for 2¾″ belt. Feeds are from shaft with four changes from gear box. All gears have C. I. guards. Tail stock sets over for taper turning. Complete with catch plate, face plate.	John Lang & Sons, Johnstone.	Good	Yes	1,700 0 0	800 0 0
7	M. 9	9″ centre back-geared, hollow spindle chucking combination turret lathe. Head stock has 3 speed cone for 3″ belt. Hollow spindle passes 2″ dia. Bed is 6½′. Carrying hexagon turret head mounted on saddle with hand-feed and selective stops.	Millholland	Bad and un-serviceable.	No, but can be repaired for usual turning work	3,700 0 0	800 0 0

LIST OF MACHINERY IN THE GOVERNMENT CENTRAL INDUSTRIAL WORKSHOP, BANGALORE—*contd.*

Sl. No.	No. on the Machine	Description of the machinery	Maker	Condition	Fit for precision work or not	Book value	Re-value
						Rs. a. p.	Rs. a. p.
8	M. 29	7″ centre, hollow spindle, sliding, surfacing and screw cutting lathe. All geared head single pulley drive for 2¾″ belt. Swings 14″ on bed and 10″ over saddle. Bed 7½′ long admitting between centres 4′ Hollow spindle passage for 1¾″ dia. Enclosed gear box giving 12 speeds from 17 RPM. to 750 RPM. Bed is mounted on C.I. studs tray with pump. The saddle is fitted with 4 way tool post. Tail stock sets over for taper turning complete with catch plate.	Hogarth Type, V.R. 18.	New, Very good	Yes	2,760 13 3	..
9	M. 6	8″ centre Lathe back-geared sliding, surfacing and screw cutting lathe on 9½′ bed admitting between centres 6½′. Swings 2½′×6″ in the gap 16″ dia. on bed and 12″ dia. on saddle. Head stock has 4 speed cone for 2″ belt. Tail stock sets over for taper turning complete with catch plate, face plate and change wheels. Sliding and surfacing is from leading screw.	Dania	Fair	No	1,380 0 0	500 0 0
10	M. 11	12″ centre back-geared boring and facing lathe on a bed of 5′ long. Swings 2′ dia. 12″ wide. The saddle is fitted with 4 way tool post. Surfacing and sliding through back shaft with 3 changes. Complete with 4 dog independent chuck. Driven by 4 speed cone for 2½″ belt.	John Lang and Sons, Johnstone.	Fair	No	1,300 0 0	800 0 0
11	M. 5	8″ back-geared hollow spindle, sliding, surfacing and screw cutting Lathe on 8′ bed Lathe admitting between centres 4′. Swings 16″ over bed, 11″ over saddle and 2½′ dia. and 7″ wide in gap. Hollow spindle pass 1½″ dia. and drive is by 4 speed cone—for 2½″ belt; bed is mounted on cabinet legs. Tail stock sets over for taper turning and has quick clamping handle Complete with catch plate, face plate and change wheels.	J. Parkinson & Sons, Shipley.	Good	Yes	1,920 0 0	1,000 0 0
12	M. 4	7″ centre back-geared sliding, surfacing and screw cutting lathe on 8′ bed admitting between centres 5′. Swings 2′ dia. 6″ wide in the gap. 14″ over bed and 11″ over saddle. Head-stock has 4 speed cone for 1¾″ belt. Tail stock sets over for taper turning complete with catch plate, face plate and change wheels.	Machine Tool, London and Birmingham.	Fair	No	1,200 0 0	400 0 0
13	M. 10.	12½″ centre, sliding, surfacing and screw cutting heavy duty trible geared fly wheel lathe, swings 6′ dia.—2½′ wide in the gap, and 25″ over bed and 19″ over saddle. Drive is by 5 speed cone by 3″ belt. The Lathe may be used in single, double and trible gear and final drive is by pinion into the internal toothed ring on back of face plate. The face plate is 4′ dia. with detachable dogs. There is a very heavy compound pillar slide rest. Feed for this is from the cam on the spindle. The tail stock is also of heavy pattern which is moved by rack and pinion and can be set over for taper turning.	Not stated on the machine.	..	..	8,900 0 0	1,500 0 0
14	M. 8	9″ centre back-geared sliding, surfacing and screw cutting lathe on 13′ bed and admitting between centres 11′. Swings 2′ dia. 6″ wide in gap. 18″ over bed and 14½″ on saddle. Self action for sliding and surfacing is only from leading screw. Head stock has 4 speed cone for 2¼″ belt. Tail stock sets over for taper turning complete with catch plate, face plate and change wheels.	Suppliers, Oaks & Co., Madras.	Fair	No	1,925 0 0	700 0 0

List of Machinery in the Government Central Industrial Workshop, Bangalore —*contd.*

Sl. No.	No. on the Machine	Description of the machinery	Maker	Condition	Fit for precision work or not	Book value	Re-value
						Rs. a. p.	Rs. a. p.
15	M. 13	10½″ centre back-geared sliding, surfacing and screw cutting lathe on 12′ bed and admitting between centres 10′. Swings 3′ dia. and 9″ wide in gap, 21″ over bed and 16″ over saddle. Head stock has 4 speed cone for 3″ belt. Complete with catch plate, face plate and change wheels.	Jessop & Co., Calcutta.	Fair	No	3,375 0 0	..
16	M. 15	Semi-automatic gear cutting machine suitable for spur gears only up to 5′ dia. and 6″ wide with a maximum pitch of 3 D.P. Indexing to be done by hand operation through worm and worm wheel with a ratio of 1 to 180 and with number of change wheels. The drive is by a single pulley for 3½″ belt.	The Atlas Eng. Co., Manchester	Fair	No	1,070 0 0	300 0 0
17	M. 16	Universal milling machine No. 2 size, with indexing head and tail stock. The table 3½′ long can move longitudinal and crosswise by self action, and is mounted on swivel base which can be set for 45 degrees right or left hand. The maximum work that can be taken for spur gear or spiral gear is 10″ dia. and 1¾′ long. The spindle has 4 speed cone for 3″ belt and is back geared, automatic stops for longtudinal self-action are provided. It can have 12 variable feeds and the mechanism is directly driven by chain gear from the main spindle and transmission is by a telescopic shaft to the bed. Spur gears, spiral gears, worm gears and bevel gears up to 4 D.P. can be cut.	Brown & Sharpe Mfy., U.S.A	Good	Yes	3,300 0 0	1,000 0 0
18	Not in use	12″ stroke travelling head shaping machine on heavy box bed 4½′ × 1½′. Ram slide has automatic traverse by screw to a length of 3′. The tool box has a down motion of 6″ and swivelling arrangement through a worm quadrant and screw worm screw for concave shaping.	Not stated on the machine.	Very bad condition; but can be repaired to give good service.	No	..	600 0 0
19	M. 17	12″ stroke light shaping machine. The tool box has a downward motion of 4″ and the bed travels to a length of 12″ and has self-action arrangement and can be lifted or lowered by screw to a distance of 15″ The machine is driven by 4 speed cone for 2″ belt.	Turner Hoare & Co., Bombay.	Fair	No	1,050 0 0	300 0 0
20	M. 22	Heavy duty crank shaping machine having 26″ stroke. Cross traverse of table is by hand or automatic and gives 1½′ movement. A 12″ machine vice is fitted on the bed which tilts and swivels with regular adjustment. Drive is by 3½″ belt over fast and loose pulleys and has brake arrangement. The eight variable feeds can be operated by a lever from a gear box.	Butler Machine Tool Co., Ltd., Halifax.	Good	Yes	5,500 0 0	5,000 0 0
21	M. 18	6″ stroke slotting machine with quick return motion which runs in continuous guides 22½″ long; drive is by 4 speed cone for 2½″ belt. Fly wheel is 2′ dia. The table is 20″ dia. and has longitudinal feed of 18″, cross traverse of 12″ and circular motion all by power. Distance from face of ram to standard is 15″ and admits 10½″ under ram.	Not marked on machine.	Fair	No	1,250 0 0	400 0 0
22	M. 25	14″ stroke slotting machine with quick return motion which runs in continuous guides 2¾′ long; driven by 4 speed cone for 3″ belt. Fly wheel is 2¾′ dia. The table is 27″ dia. and has longitudinal feed of 27″, cross traverse of 15″ and circular motion all by power. Distance from face of ram to standard s 24″ and admits 15″ under ram.	London Bros., Glasgow.	Fair	No	..	..

LIST OF MACHINERY IN THE GOVERNMENT CENTRAL INDUSTRIAL WORKSHOP, BANGALORE—*contd.*

Sl. No.	No. on the Machine	Description of the machinery	Maker	Condition	Fit for precision work or not	Book value	Re-value
						Rs. a. p.	Rs. a. p.
23	M. 20	Rapidor power hack sawing machine 8″×8″ capacity with saw frame arranged to maintain permanent alignment and also method to dispense with weights. Automatic relief on the return stroke. Table is 14″×10″ and is fitted with a vice. Drive is by fast and loose pulleys for 3″ belt. The machine takes 16″ blade.	Edward G. Herbert, Ltd., Manchester.	Fair	No	795 0 0	700 0 0
24	M. 21	Screwing machine to screw up to 3″ pipes or bolts. Machine bed is 2½′ long with C.I. studs tray. Saddle motion is by pinion and rack and is fitted with self-centring vice. Drive to spindle is by 4 speed cone for 2¾″ in belt through reduction gearing.	Hodgson Hartley, (1909)Ltd., Cleckheaton.	Fair	No	2,100 0 0	400 0 0
25	M. 23	Double ended dry grinder to make 16″×2″ wheels. Spindle is 1¼″ dia. and runs in ball bearing. It is mounted on C.I. standard 2½′ high; belt driven by fast and loose pulleys for 2½″ belt.	Not stated	Fair	No	200 0 0	100 0 0
26	M. 25	Universal cutter and reamer grinding machine. The machine takes 18″ between centres and grinds cutters and shell reamers to 6″ dia. and 7″ long. The pulley is to take 1″ belt and the grinder spindle 2″ belt. The counter shaft has fast and loose pulleys.	Greenfield Machine Co., Greenfield Mass, U.S.A.	Good	Yes	370 0 0	300 0 0
27	M. 19	4′ Radial drilling machine with 1⅝″ dia. spindle driven by fast and loose pulleys with 2″ belt. Feed is by hand or power and is 6″. The arm is mounted on a C.I. turned pillar. The arm is operated by push or pull by the hand. The arm swings to a radius of 4′ and not liftable. The bed 3½′×2′ can be lifted or lowered to a distance of 15″ and has T slots for fixing the work.	Corona	Fair	No	1,925 0 0	500 0 0
28	M. 24	4½′ back geared, box bed, radial drilling machine with 2¾″ dia. spindle having a downward feed of 17″ and is driven by 5 speed cone for 3″ belt. Feed is by hand or by power. Arm is mounted on C.I. pillar and slides up and down over it to a distance of 2′. Box bed has a working surface of 4′×2¾′ and 2′—7″ high and T-slotted on the surface and sides. The arm post swivels by means of worm and worm-wheel by hand operation, and the vertical motion by power. Maximum drilling radius is 4½′.	Not marked.	Fair	No	1,000 0 0	800 0 0
29	S. 25	6″ pillar drilling machine mounted on a C.I. base of 3′×1½′. Spindle is 1¼″ dia. and is bored for No. 3 morse taper. It has self-contained countershaft and is driven by 2″ belt through 4 speed cone. The work table is 16″ dia. and has rise and fall of 22″ by rack and pinion. The feed is both by hand or power.	Pollars & Shipman, Ltd., Leicester.	Fair	No	..	250 0 0
30	M 27	Rack driven planing machine to plane 4′ long × 1½′. Bed is 6′ long 1½′ wide and 2¼′ high. It runs in V-slides and has quick return motion. The drive is by 3″ belt. The cross slide has a vertical adjustment of 2′ and carries a tool box self-acting in all directions. The downward movement of the tool is 4″.	Not stated on the machine.	Fair	No	1,700 0 0	

List of Machinery in the Government Central Industrial Workshop, Bangalore—*contd.*

Sl. No.	No. on the Machine	Description of the machinery	Maker	Condition	Fit for precision work or not	Book value	Re-value
31	Not in use	Rack driven planing machine having a heavy C.I. bed 8¼′ long, 2¾′ wide and 1¾′ high, the table has a working surface of 6′ long, 3½″ wide and runs in wide V. grooves and has quick return motion. The drive is by 3″ belt. The cross slide has a vertical adjustment of 3′ operated by hand and carries a tool box self-acting in all directions. The downward movement of the tool is 6″.	William Muir & Co., Manchester	Fair	No	Rs. a. p. ..	Rs. a. p. Marked Rs. 10 nominal.
32	..	Hydraulic pump for testing pressure heaving the brass plunger 2⅛″ dia. and 3″ stroke. It is mounted on water chamber having a capacity to hold 4½ gallons of water. The release cock sends back the water under pressure back to container. The pump has a locking arrangement when not in use.	Alex More & Co., Engineers, Glasgow.	Fair	No	300 0 0	100 0 0
33	..	Squirrel cage A.C. Induction motor, 25 H.P. 3 phase, 25 cys, 220 Volts, 750 RPM.	G.E. Co.	Fair	Workable	2,600 0 0	800 0 0
34	M. 28	Herbert's saw blade sharpening machine (Rapidor). To be fitted on bench with head stock and without grinding wheel.	Alfred Herbert (India) Ltd., Calcutta.	Not in use		400 0 0	380 0 0
35	..	Champion Blower with forge complete. It has a forge attached which is mounted on a stand. The blower has gearing arrangement and operated by hand. It is portable.	Champion Blower and Forge Co., Ltd., U.S.A	Old and wornout. The fan in the blower is welded (being very old) to the shaft.	No	71 8 0	71 8 0
36	..	Cupola—small—(1 ton capacity) It is 20′—6″ in length having 1′—6″ internal dia. The capacity of the cupola is 1 ton.	..	Not in good condition.	No	2,347 0 0	1,900 0 0
37	..	Cupola Big size—(2 ton capacity) Internal dia: 2′—4″. There is a fan blower also which can be used with this cupola. Height 20′—6″.	..	Old and patched in a number of places.	No	It is to be renewed soon.	
38	..	Annealing Furnace—It is built of fire bricks having the dimensions of 10′ long and 10′ broad with channel iron supports to keep the furnace intact. There are two charging doors and chimneys for the purpose of charging coal and for draft. The height of the furnace is 8′—6″.	..	..	No	2,850 0 0	2,200 0 0
39	..	Thimbling barrel—It has a hexagonal barrel end plates with rectangular plates fixed on all six sides. It is mounted on C.I. stand having bearings for thimbling purposes. It has loose and fast pulleys having a dia. of 2′—6″ to run the barrel by belt.	..	Old	No	342 0 0	300 0 0
40	..	Foster's Pnyrometer—This is a recording prometer. It is mounted on a wall near the Annealing furnace. It works all the 24 hours showing the temperature of the annealing furnace. The range of temperature is 0-1100 degrees centigrade.	Foster Instrument Co.	Fair	..	885 0 0	885 0 0
41	..	Core Oven—It is built of fire bricks with the dimensions of 21′—9″×12′—5″×8′—10″ high. It has two M.S. doors. There is a chimney and coal charging arrangement to produce hot air for drying the moulds.	..	Old	No	1,300 0 0	700 0 0
42	..	Root's Blower—It is a belt driven blower. It has two belt pulleys on either sides having 1′ in dia. There is the gear arrangement to reduce the speed. The inlet of the blower has a rectangular box with perforation to receive fresh air.	Turner Hoare & Co., Engineers, Bombay.	Very old, lying idle. Has been replaced.	No	1,990 11 0	1,800 0 0

LIST OF MACHINERY IN THE GOVERNMENT CENTRAL INDUSTRIAL WORKSHOP, BANGALORE—*contd.*

Sl. No.	No. on the Machine	Description of the machinery	Maker	Condition	Fit for precision work or not	Book value	Re-value
						Rs. a. p.	Rs. a. p.
43	..	Electric Drill—It is a portable electric drill having the capacity for $\frac{7}{8}$" hole drilling. It is a single phase 220 volts drill having the power of fractional H.P.	Machine Tool Co.,	Not in use	No	257 0 0	257 0 0
44	..	Hand Moulds—It has a stand which supports the frame on which a tilting face plate is mounted. This plate can be tilted round. There are two snap flasters for moulding.	The Adaptable Moulding Machine Co., Birmingham Patent.	It is fairly in good condition.	No	1,138 0 0	1,138 0 0
45	..	Avery's Portable platform—It is portable. The capacity of the platform is to weigh 1 ton and 1 cwt.	Fairbanks, U.S.A.	It is old & the knife edges are not sharp. It requires repairs.	No	731 0 0	500 0 0
46	..	Electric Tool Grinder—It has two grinding stones on either ends—3 H.P. 1450 RPM. 25 cys. 220 volts with starter.	Horace Green & Co., Ltd.	Fairly Good	No	909 1 0	300 0 0
47	..	Weigh Bridge—(4 tons) This is a 4 ton weigh bridge with platform erected to the ground level so that carts can be brought over it with load for weighments.	Avery's, Birmingham.	It shows the difference of 21 lbs. to which we add counter weights while taking weighments. It is old. The knife edges are worn out.	No	800 0 0	800 0 0
48	..	Overhead Chain Travelling crane—It is used for lifting heavy mould boxes, ladles with molten metal, etc. This crane is mounted on a hand operated trolley. It has a differential chain pulley for lifting arrangements.	..	Recently the old and broken chain pulley was renewed; it is old and worn out.	No	2,076 0 0	2,076 0 0
49	..	New Root's Blower—This blower is directly coupled to the 10 H.P. Induction Motor.	Lanchashire Dynamo & Crypto Ltd., Manchester & Willsden.	New—Good at its work.	Fair	2,571 13 8	..
50	..	10 H.P. 1425 RPM. 220 Volts, 25 cy. 3-phase squirrel cage motor. This squirrel cage induction motor has been directly coupled to the new Root's Blower.	Do	Do	Good	..	..
51	..	Squirrel cage Induction motor—20 H.P. 25 amp. 220 V. starter with Ammeter.	G.E. Co.	Old—working.	..	..	..
52	..	Air Break Star Delta Starter for 10 H.P. motor 220 V—25 Amp.	Lancashire Dynamo & Crypto, Ltd.	New	Good	2,100 0 0	600 0 0
53	..	Ball Drop for breaking heavy C.I. scrap—only the tower is available.	..	Old	Not in use	Scrap.	..
54	..	C.I. Marking Table—New. Size—4′×8′×3′ ..	..	New	In good condition.	482 0 0	300 0 0
55	..	Blower in smithy section—Delivery 6" and is supplying air for forges.	Duplex Dildays, 60, Union, Ltd., Birmingham.	..	Good	245 0 0	100 0 0

LIST OF MACHINERY IN THE GOVERNMENT CENTRAL INDUSTRIAL WORKSHOP, BANGALORE.—*contd.*

Sl. No.	No. on the Machine	Description of the machinery	Maker	Condition	Fit for precision work or not	Book value	Re-value
						Rs. a. p.	Rs. a. p.
56	..	Power Hammer—400 lbs. is the force of impact—stroke—16", High pressure— 6" dia. low pressure 16" dia. Driven by smithy counter shaft and belt.	Associated British Machine Tool Makers, London.	..	Good	5,600 0 0	5,128 0 0
57	..	Grinding Machine—One grinding wheel 16"×2" single wheel—driven by smithy counter shaft and belt.	..	New	..	..	..
58	..	Shearing Machine—small size—one, Jaw width 18", Stroke 1½". It can cut ¼" maximum thickness sheet and it can cut angle iron from 2" to 4" thickness of angle ½" to ½".	Alfred Herbert & Co., Ltd., Calcutta.	Not in good condition.	..	1,600 0 0	1,600 0 0
59	..	Rolling Machine (for sheet rolling)—5' long having 3 of roller of 6" dia. and 5' long. It can roll sheets of ⅛" to ½" to any diameter. Driven by hand—is about 35 years old.	..	In fair condition.	..	1,300 0 0	500 0 0
60	..	Punching and shearing Machine—one—Jaw 14". It can cut plates from ¼" to ⅝" stroke 2"— punches ¼" to ¾" dia. in ½" thick sheets.	..	Old—In fair condition.	..	2,750 0 0	800 0 0
61	..	"Condallic" Electric Blower—220 V., 40—60 Cys. 305 wts.—No. F. 5×19B 42299	The Clements Co., U.S.A.	Old—Not in good condition.	..	150 2 0	Scrap.
62	..	Smithy section Motor—25 H.P. No. 1468032 25 cy. 220 V. 750 RPM. with oil immersed starter.	G.E. Co., U.S.A.	In fair condition.	..	2,600 0 0	800 0 0
63	..	Air Compressor set—driven by 25 H.P. elec: motor—25 cy. 220 volts. 100 lbs per sqr. inch pressure. Free air capacity 160 c.ft. per minute. Compressor Horizontal Type. Single cylinder double acting, single stage. Water cooled	Crompton Parkinson Electric Motor.	New	..	6,472 5 0	..
64	..	No. 1. Boyer superior chipping hammers No. 2.	Tools worked by compressed air.	New	..		
65	..	No. 40. Boyer Long stroke Rivetting hammer 1 to revit up to ⅜" dia. rivets.		New	..		
66	..	Rotary Drill No. 1—to drill up to ¼" dia. ..		New	..		
67	..	Rotary Grinders complete No. 2		New	..		
68	..	Sand Blaster No. 1					
69	Guilotine	Shearing machine—to cut sheets up to 22 G. sheets and thinner sizes—3' width—1½" stroke.	Guillotine Co., England.	New	Workable	575 0 0	550 0 0
70	..	Electric Drill—RPM. 206—No load 350 A.C. on D.C. 226 V. amps. 7-3. Cap ¾ type 342—S. No. 36717.	The Stanley Rule and Level Plant, Stanley Works, New Briton.	Not in good condition.	..	247 0 0	247 0 0
71	..	Beaver Die set No. 10	Barden & Co., Warren, U.S.A.	Good	Can be used for work.	622 8 0	622 8 0
72	..	Brinnel Testing Apparatus—for testing hardness of metals.	Poldi Steel Co., Ltd., England.	Good	In Good condition.	76 8 0	76 8 0
73	..	Parodyne Arc Welding set Generator—75/25 V. 200 amps. capacity.	Metropolitan Vickers Elec. Co., Ltd., Manchester and Sheffield.	Good	Fit for precision work. New.		
74	..	Induction Motor—Type K. 4826—H.P. 10. V. 220, Amp. 24-5, RPM. 1425, P.H. 3, No. S. W. 19459.	British Thompson Housten Co., Ltd., Rugby, England.	Good	In good condition.	1,860 12 3	..

LIST OF MACHINERY IN THE GOVERNMENT CENTRAL INDUSTRIAL WORKSHOP, BANGALORE—*concld.*

Sl. No.	No. on the Machine	Description of the machinery	Maker	Condition	Fit for precision work or not	Book value	Re-value
						Rs. a. p.	Rs. a. p.
75	..	Portable Grinding set—RPM. 1420, 220 V. to 380 V. 2·5 to 1·7 AMP—0·74 K.W. COS. 0·83. Cycles 25, with flexible shaft and grinding wheel.	..	Good	Not for precision work.	392 8 0	..
76	..	Pillar Drilling Machine—Capacity of drilling up to 1" dia.	A. A. Jones and Siemen, New County, Leicester.	Not very good.	Do	..	100 0 0
77	..	Electric Grinders—No 2, H.P. 3, Cys. 25 Volts 220, 7·4 Amps. RPM. 1450, Phase 3	British Thomson Houston Co., Ltd., England.	Fairly fit for precision work.	Workable	1,174 0 0	950 0 0
78	..	Electric Motor—M.O.T. 3, 25 cys. 11 kw. 15 H.P. RPM. 1430—P.R. 220 V. 36 amps.	A.S.E.A. Electric Co., Ltd., London, Bombay & Calcutta, Made in Sweden.	Fair	Good condition.	2,759 15 0	2,700 0 0
79	..	Ganz D.C. Generator—25 to 45 volts. 200 amps. 1460 RPM. with separate excitation. Volts 25, amps. 4, self excitation Ganz volts 26 to 45. amps. 6, Ohms. 77·6	Ganz	Fair	Workable but Commutator worn out and very badly grooved. Volt meter not in order, required to be reconditioned.		
80	..	Double geared pillar drilling machine—capacity 1½"; it is heavily built. It can be used for drilling flanges of standard lengths of pipes	M.I.C.C. Smith Beacock and Tanett Victoria Foundry, 1863.	Fair	Workable	1,300 0 0	700 0 0

Total Book value .. .. .. Rs. 1,10,557-9-2.
Revalued .. .. .. Rs. 50,391-8-0.

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